

### PLANET INSURANCE COMPANY MADISON, WISCONSIN

NAMED

MINVEN GOLD CORP. / BROHM MINING CORP.

INSURED

P.O. Box 485

AND

Deadwood, SD 57732

POST OFFICE

### FIRST PARTY POLLUTION CLEAN-UP DECLARATIONS

### THIS IS A CLAIMS-MADE POLICY--PLEASE READ CAREFULLY

POLICY N	UMBER: NTD2509	514	
Item 1:	NAMED INSURED	MINVEN GOLD CORP. / BROHM MINING CORE	) <u>.                                    </u>
	address	P.O. Box 485	
		Deadwood, SD 57732	
Item 2:	POLICY PERIOD		
	FROM Septemb 12:01 A.M. sta above.	er 29, 1992 TO September 29, ndard time at the address of the NAME	1993 ID INSURED shown
Item 3:	LIMIT OF LIABI	LITY, up to \$266,000	each LOSS
		\$286,000	Total for all LOSSES
Item 4:	RETENTION \$50	,000	each LOSS
Item 5:	COVERED LOCATI	ON(S) Gilt Edge Mine	<del></del>
		Deadwood, SD	
Item 6:	POLICY PREMIUM	\$50,000	
Item 7:	EXTENDED DISCO	VERY CLAUSE DATE <u>September 29, 1992</u>	
Brokers	Marsh & McLenr One Norwest Co 1700 Lincoln & Denver, CO 80	enter Street, Suite 4900	

Authorized Representative BL/sm 9/30/92

### ENDORSEMENT #1

This endorsement, effective 12:01 a.m., September 29, 1992 forms a part of Policy No. NTD2509514 issued to MINVEN GOLD CORP./BROHM MINING CORP. by Planet Insurance Company.

It is hereby agreed upon that this policy does not apply to LOSS arising out of the following:

- 11 Radioactive Matter Exclusion: the actual, alleged or threatened exposure of person(s) or property to any radioactive matter except where specifically endorsed onto the policy.
- 2) Non-Owned Disposal Site Exclusion: from waste or materials transported via automobile, aircraft, watercraft or rolling stock beyond the boundaries of the covered locations identified in the Declarations.
- 3) Underground Tank and Underground Piping Exclusion: the presence or use of any underground tank or underground piping to or at the covered locations identified in the Declarations.
- 4) Absolute Asbestos Exclusion: the actual, alleged or threatened exposure to person(s) or property to any asbestos matter.
- 5) Superfund Exclusion: locations designated as being either proposed for or on the National Priorities List or on any state "Superfund" list unless specifically scheduled onto the policy by endorsement.

All other terms and conditions remain the same.

# ENDORSEMENT #2

This endorsement, effective 12:01 a.m., September 29, 1992 forms a part of Policy No. NTD2509514 issued to MINVEN GOLD CORP./BROHM MINING CORP. by Planet Insurance Company.

It is hereby agreed upon that this policy will not apply to CLAIMS arising from the presence or required removal or abatement of lead paint.

All other terms and conditions remain the same.

(Authorized Representative)

### ENDORSEMENT #3

This endorsement, effective 12:01 a.m., september 29, 1992 forms a part of Policy No. NTD2509514 issued to MINVEN GOLD CORP./BROHM MINING CORP. by Planet Insurance Company.

It is hereby agreed upon that the following entity is included as an Additional Insured, but solely as respects liability arising out of ownership, operation, maintenance or use of the locations covered under this policy.

### ADDITIONAL INSURED

State of South Dakota

All other terms and conditions remain the same.

(Authorized Representative)

### PLANET INSURANCE COMPANY Sun Prairie, Wisconsin

(A Stock Insurance Company Herein Called the Company

POLLUTION CLEAN-UP POLICY

This is a Claims-Made Policy -- Please Read Carefully

OCT 23 1992

In consideration of the payment of premium, in reliance upon the statements in the declarations and application made a part hereof and subject to all the terms of this policy, the Company agrees with the NAMED INSURED as follows:

### I. INSURING AGREEMENT

To indemnify the INSURED for CLEAN-UP COSTS, only, incurred by the INSURED as a result of CLAIMS first made against the INSURED and reported to the Company, in writing, during the POLICY PERIOD, or EXTENDED DISCOVERY PERIOD if applicable, for ENVIRONMENTAL DAMAGE on or at the location(s) designated in Item 5 of the Declarations.

### II. DEFINITIONS

- A. INSURED means the NAMED INSURED and any director, officer, partner or employee thereof while acting within the scope of his/her duties as such.
- B. CLEAN-UP COSTS means expenses for the removal or neutralization of solid, liquid, gaseous or thermal contaminants, irritants or pollutants on or at the location(s) designated in Item 5 of the Declarations. CLEAN-UP COSTS do not include expenses associated with the defense of any administrative and/or legal proceeding of any kind.
- C. BODILY INJURY means bodily injury, sickness, disease, mental anguish or shock sustained by any person, including death resulting therefrom.
- D. PROPERTY DAMAGE means:
  - 1. physical injury to or destruction of tangible property including the resulting loss of use thereof;
  - loss of use of tangible property that has not been physically injured or destroyed.
- E. POLICY PERIOD means the period set forth in Item 2 of the Declarations, or any shorter period arising as a result of cancellation.
- F. ENVIRONMENTAL DAMAGE means the injurious presence in or upon land, the atmosphere, or body of water, of solid, liquid, gaseous or thermal contaminants, irritants or pollutants.
- G. NAMED INSURED means the person or entity designated as such in Item 1 of the Declarations.
- H. CLAIM means CLEAN-UP COSTS incurred by the insured in the discharge of a legal obligation validly imposed through governmental action which is initiated during the policy period because of ENVIRONMENTAL DAMAGE to which this insurance applies.

### III. TERRITORY

This policy only applies to claims arising from ENVIRONMENTAL DAMAGE in the United States, its territories or possessions or Canada and made or brought in the United States, its territories or possessions or in Canada.

### IV. EXCLUSIONS

This insurance does not apply to:

- CLAIMS arising from ENVIRONMENTAL DAMAGE existing prior to the inception of this
  policy, if any officer, director, partner or other employee of the NAMED INSURED
  responsible for environmental affairs, control or compliance knew or could have
  reasonably foreseen that such ENVIRONMENTAL DAMAGE could have been expected to
  give rise to a claim;
- 2. CLAIMS seeking non-pecuniary relief, including but not limited to fines, penalties or exemplary damages;
- 3. CLAIMS seeking compensatory damages;
- 4. CLAIMS arising from the ownership or operation of any "offshore facility" as defined in the Outer Continental Shelf Lands Act Amendment of 1978 or the Clean Water Act of 1977 as amended in 1978, or any "deepwater port" as defined in the Deepwater Port Act of 1974, as amended, nor shall there be any coverage for liability resulting from emissions of drilling fluid, oil, gas, or other fluids from any oil, gas, mineral, water, or geothermal well of any nature whatsoever;
- liability arising under any worker's compensation, unemployment compensation or disability benefits law or similar law;
- 6. liability arising from injury to any employee of the INSURED if such injury occurs during and in the course of said employment;
- 7. liability arising as a result of others assumed by the INSURED under any contract or agreement;
- 8. liability arising as a result of PROPERTY DAMAGE or BODILY INJURY;
- 9. CLAIMS arising out of the ownership, maintenance, use, operation, loading or unloading of any automobile, aircraft, watercraft or rolling stock; except when on or at the location(s) designated in Item 5 of the Declarations;
- 10. CLAIMS arising from ENVIRONMENTAL DAMAGE on or at the location(s) designated in Item 5 of the Declarations, once such location(s) are sold, leased, given away, abandoned or operational control has been relinquished;
- 11. A. Under any Liability Coverage, to CLEAN-UP COSTS
  - 1. with respect to which an INSURED under this policy is also an insured under a nuclear energy liability policy issued by Nuclear Energy Liability Insurance Association, Mutual Atomic Energy Liability Underwriters or Nuclear Insurance Association of Canada, or would be an insured under any such policy but for its termination upon exhaustion of its limit of liability; or

- 2. resulting from the HAZARDOUS PROPERTIES of NUCLEAR MATERIAL and with respect to which (a) any person or organization is required to maintain financial protection pursuant to the Atomic Energy Act of 1954, or any law amendatory thereof, or (b) the INSURED is, or had this policy not been issued would be, entitled to indemnity from the United States of America, or any agency thereof, under any agreement entered into by the United States of America, or any agency thereof, with any person or organization.
- B. Under any Liability Coverage, to CLEAN-UP COSTS resulting from the HAZARDOUS PROPERTIES OF NUCLEAR MATERIAL, if
  - the NUCLEAR MATERIAL (a) is at any NUCLEAR FACILITY owned by, or operated by or on behalf of, an INSURED or (b) has been discharged or dispersed therefrom;
  - 2. the NUCLEAR MATERIAL is contained in SPENT FUEL or WASTE at any time possessed, handled, used, processed, stored, transported or disposed of by or on behalf of an INSURED; or
  - the CLEAN-UP COSTS arising out of the furnishing by an INSURED of services, materials, parts or equipment in connection with the planning, construction, maintenance, operation or use of any NUCLEAR FACILITY.
- C. As used in this exclusion:

"HAZARDOUS PROPERTIES" including radioactive, toxic or explosive properties;

"NUCLEAR MATERIAL" means SOURCE MATERIAL, SPECIAL NUCLEAR MATERIAL OR BY PRODUCT MATERIAL:

"SOURCE MATERIAL", "SPECIAL NUCLEAR MATERIAL", AND "BYPRODUCT MATERIAL" have the meanings given them in the Atomic Energy Act of 1954 or in any law, amendatory thereof;

"SPENT FUEL" means any fuel element or fuel component, solid or liquid, which has been used or exposed to radiation in a NUCLEAR REACTOR;

"WASTE" means any waste material (1) containing BYPRODUCT MATERIAL and (2) resulting from the operation by any person or organization of any NUCLEAR FACILITY included within the definition of NUCLEAR FACILITY under paragraph (a) or (b) thereof;

### "NUCLEAR FACILITY" means

- any NUCLEAR REACTOR,
- 2. any equipment or device designed or used for (1) separating the isotopes of uranium or plutonium (2) processing or utilizing SPENT FUEL, or (3) handling, processing or packaging WASTE,
- 3. any equipment or device used for the processing, fabricating or alloying of SPECIAL NUCLEAR MATERIAL if any time the total amount of such material in the custody of the INSURED at the premises where such equipment or device is located consists of or contains more than 25 grams of plutonium or uranium 233 or any combination thereof, or more than 250 grams of uranium 235,

4. any structure, basin, excavation, premises or place prepared or used for the storage of disposal of WASTE,

and includes the site on which any of the foregoing is located, all operations conducted on such site and all premises used for such operations;

"NUCLEAR REACTOR" means any apparatus designed or used to sustain nuclear fission in a self-supporting chain reaction or to contain a critical mass of fissionable material;

- 12. CLAIMS arising from ENVIRONMENTAL DAMAGE based upon or attributable to the INSURED's intentional, willful or deliberate non-compliance with any statute, regulation, ordinance, administrative complaint, notice of violation, notice letter, executive order, or instruction of any governmental agency or body;
- 13. arising from ENVIRONMENTAL DAMAGE based upon or attributable to acid rain conditions;
- 14. arising from any consequence, whether direct or indirect, of war, invasion, act of foreign enemy, hostilities (whether war be declared or not), civil war, rebellion, revolution, insurrection or military or usurped power, strike, riot or civil commotion;
- 15. liability arising out of any monitoring, sampling, analyzing, or testing following the removal or neutralization of solid, liquid, gaseous or thermal contaminants, irritants or pollutants.
- 16. CLAIMS arising from ENVIRONMENTAL DAMAGE on or at location(s) other than those designated in Item 5 of the Declarations even if such ENVIRONMENTAL DAMAGE is emanating from a designated location(s).
- 17. any costs, charges, or expenses associated with the defense of any administrative and/or legal proceeding of any kind.

### V. EXTENDED DISCOVERY PERIOD

The NAMED INSURED shall be entitled to an extension of this coverage on non-renewal or cancellation of the policy subject to the following terms and conditions:

- 1. Where cancellation or non-renewal is by the Company, the NAMED INSURED shall be entitled to purchase 12 months extension from the date of cancellation or expiration of the policy upon payment of an additional premium of not more than 200% of the premium shown in Item 6 of the Declarations.
- 2. Where cancellation or non-renewal is by the NAMED INSURED, the NAMED INSURED shall be entitled to purchase 12 months extension from the date of cancellation or expiration of the policy upon payment of an additional premium of not more than 200% of the premium shown in Item 6 of the Declarations.

The extension of coverage granted hereunder shall only apply as respects ENVIRONMENTAL DAMAGE existing as of or prior to the date of expiration or cancellation of this policy, and otherwise covered by this policy. It is a condition precedent to the operation of the rights granted under this clause that payment of the appropriate premium shall be made not later than ten days after expiration in the case of non-renewal or prior to cancellation in the case of cancellation.

For purposes of this clause the quotation of different terms and conditions by the Company shall not be construed as nonrenewal.

### VI. LIMIT OF LIABILITY AND RETENTION

This policy is to pay 100% of CLEAN-UP COSTS in excess of the retention amount stated in Item 4 of the Declarations. The retention amount is to be borne by the INSURED and is not to be insured. All CLEAN-UP COSTS arising out of the same or related ENVIRONMENTAL DAMAGE at any one location shall be considered a single CLEAN-UP COSTS.

Subject to the foregoing, the Company's total liability for all CLEAN-UP COSTS from claims first made against the INSURED and reported in writing to the Company during the POLICY PERIOD and including the EXTENDED DISCOVERY PERIOD, if applicable, shall not exceed the limit of liability shown in Item 3 of the Declarations as applicable to the "Annual Aggregate".

### VII. CLAIM PROVISIONS

- 1. In the event of a claim, immediate written or oral notice containing particulars sufficient to identify the INSURED and also reasonably obtainable information with respect to the time, place and circumstances thereof, shall be given by or for the INSURED to the Company or any of its authorized agents. In the event of oral notice, the INSURED agrees to furnish a written report as soon as possible. The INSURED shall immediately forward to the Company every demand, notice, summons, order, or other process received by the INSURED or the INSURED's representative.
- 2. The INSURED shall cooperate with the Company and upon the Company's request shall submit to examination and interrogation by a representative of the Company, under oath if required, and shall attend hearings, depositions and trials and shall assist in effecting settlement, securing and giving evidence, obtaining the attendance of witnesses and in the conduct of suits, as well as in the purpose of investigation and/or defense, all without charge to the Company. The INSURED shall further cooperate with the Company and do whatever is necesary to secure and effect any rights of indemnity, contribution or apportionment which the INSURED may have. The INSURED shall not, except at his own costs, make any payment, admit any liability, settle any claims, assume any obligation or incur any expense without the written consent of the Company.
- 3. In the event of any ENVIRONMENTAL DAMAGE or knowledge of any circumstance not previously disclosed that might reasonably be expected to result in an ENVIRONMENTAL DAMAGE, the INSURED shall promptly take all reasonable steps to prevent injury or damage from arising out of the ENVIRONMENTAL DAMAGE or circumstances and notify the Company of such circumstances or preventive measures immediately.
- 4. No costs, charges or expenses shall be incurred without the Company's consent which shall not be unreasonably withheld. If the Company recommends a settlement of a claim:
  - a. for an amount within the retention and the INSURED refuses such settlement, the Company shall not be liable for CLEAN-UP COSTS in excess of the retention;
  - b. for a total amount in excess of the balance of the retention and the INSURED refuses to such settlement, the Company's liability for CLEAN-UP COSTS shall be limited to that portion of the recommended settlement and the costs, charges and expenses as of the INSURED's refusal which exceed the retention and fall within the Limit of Liability.

5. The Company shall have the right but not the duty to assume the adjustment of any claim. In case of exercise of this right, the INSURED, on demand of the Company, shall promptly reimburse the Company for any element of CLEAN-UP COSTS falling within the INSURED's retentions. The INSURED shall assist and cooperate with the Company.

### VIII. CONDITIONS

- 1. INSPECTION AND AUDIT -- The Company shall be permitted but not obligated to inspect on a continuing basis the INSURED'S property or operations, at any time. Neither the Company's right to make inspections nor the actual undertaking thereof nor any report thereon shall constitute an undertaking, on behalf of the INSURED or others, to determine or warrant that property or operations are safe, healthful or conform to acceptable engineering practice or are in compliance with any law, rule or regulation.
- 2. CANCELLATION -- This policy may be cancelled by the NAMED INSURED by surrender thereof to the Company or any of its authorized agents or by mailing to the Company written notice stating when thereafter the cancellation shall be effective. This policy may be cancelled by the Company by mailing to the NAMED INSURED at the address shown on this policy, written notice stating when not less than 30 days (10 days for non-payment of premium) thereafter such cancellation shall be effective. The mailing of notice as aforesaid shall be sufficient proof of notice. The time of surrender or the effective date and hour of cancellation stated in the notice shall become the end of the POLICY PERIOD. Delivery of such written notice either by the NAMED INSURED or by the Company shall be equivalent to mailing.

If the NAMED INSURED cancels, earned premium shall be computed in accordance with the customary short rate table and procedure. If the Company cancels, earned premium shall be computed pro rata. Premium adjustment may be made either at the time cancellation is effected or as soon as practicable after cancellation becomes effective, but payment or tender of unearned premium is not a condition of cancellation.

- 3. DECLARATIONS -- By acceptance of this policy, the INSURED agrees that the statements in the declarations and application are his agreements and representations, that this policy is issued in reliance upon the truth of such representations and that this policy embodies all agreements existing between himself and the Company or any of its agents relating to this insurance.
- 4. ACTION AGAINST COMPANY -- No action shall lie against the Company unless, as a condition precedent thereto, there shall have been full compliance with all the terms of this policy, nor until the amount of the INSURED'S obligation to pay shall have been finally determined either by judgement against the INSURED after actual trial or by written agreement of the INSURED, the claimant and the Company.

Any person or organization or the legal representative thereof who has secured such judgement or written agreement shall thereafter be entitled to recover under this policy to the extent of the insurance afforded by this policy. No person or organization shall have any right under this policy to join the Company as a party to any action against the INSURED to determine the INSURED'S liability, nor shall the Company be impleaded by the INSURED or his legal representative. Bankruptcy or insolvency of the INSURED or of the INSURED'S estate shall not relieve the Company of any of its obligations hereunder.

- 5. ASSIGNMENT -- Assignment of interest under this policy shall not bind the Company until its consent is endorsed thereon.
- 6. SUBROGATION -- In the event of any payment under this policy, the Company shall be subrogated to all the INSURED'S rights of recovery therefor against any person or organization and the INSURED shall execute and deliver instruments and papers and do whatever else is necessary to secure such rights. The INSURED shall do nothing after loss to prejudice such rights.
- 7. CHANGES -- Notice to any agent or knowledge possessed by any agent or by any other person shall not effect a waiver or a change in any part of this policy or estop the Company from asserting any right under the terms of this policy; nor shall the terms of this policy be waived or changed, except by endorsement issued to form a part of this policy.
- 8. SOLE AGENT -- The INSURED first named in Item 1 of the declarations shall act on behalf of all INSUREDS for the payment or return of premium, receipt and acceptance of any endorsement issued to form a part of this policy, giving and receiving notice of cancellation or non-renewal, and the exercise of the rights provided in the EXTENDED DISCOVERY PERIOD clause.
- 9. OTHER INSURANCE -- Where other valid and collectable insurance is available to the NAMED INSURED for CLEAN-UP COSTS covered under the terms and conditions of the policy the Company's obligation to the INSURED is as follows:
  - a. This insurance shall apply as excess insurance over any other valid and collectable insurance be it primary or excess.
  - b. Where this insurance is excess over other valid and collectable insurance, the Company will pay only its share of the amount of CLEAN-UP COSTS, if any, that exceeds the total amount that all such other insurance will pay for the CLEAN-UP COSTS in the absence of this insurance.
- 10. CHOICE OF LAW In the event that the INSURED and the Company dispute the meaning, interpretation or operation of any term, condition, definition or provision of this policy resulting in litigation, arbitration or other form of dispute resolution, the INSURED and the Company agree that the law of the State of New York shall apply and that all litigation, arbitration or other form of dispute resolution shall take place in New York. In the event the INSURED and the Company agree to resolve their dispute by arbitration any such arbitration shall be in accordance with the commercial arbitration rules of the American Arbitration Association.

IN WITNESS WHEREOF the Company has caused this policy to be signed by its president and secretary and countersigned on the declarations page by a duly authorized agent of the Company.

Linda C. Hohn

President

Secretary



## **TELEFAX**

DATE:

10/26/92

TO:

FAX NO:

( )

FROM:

J. C. SOWERS

PAGES:

1 OF 8 (INCLUDING THIS COVER PAGE)

REGARDING: FINANCIAL ASSURANCE BOND

MESSAGE: HERE IS THE POLICY ITSERF.

PLEASE CALL (303) 980-5615 IF YOU HAVE ANY PROBLEMS RECEIVING

DATE/TIME = OCT-26 10:13

JOURNAL NO. = 01

COMM.RESULT = OK

PAGES = 008

FILE NO. =

DURATION = 00:05'55

MODE = XMT

STATION NAME =

TELEPHONE NO. = T 16055781709

RECEIVED ID = 0

RESOLUTION = STANDARD

# PLANET INSURANCE COMPANY

### gun Prairia, Wisconsin

APPLICATION FOR POLLUTION CLEAN-UP COVERAGE (Include 10% report, annual report, and flow chart of process if available.)

# This is an application for a CLAIMS MADE Policy

	INSURED: (Include All Subsidiary Companies to be Covered)
Brok	m Mining Corporation
epa I	BRTIFICATION NUMBER(S): DNA
rosi	OFFICE ADDRESS: P.O. Box 485, Deadwood, SD 57732
	IONS TO BE COVERED: Gilt Edge Mine
LOCAT	IONS TO BE COVERED!
<del> </del>	
NAME	INSURED IS:
X	Partnership_/_ Corporation Joint VentureOther
HOM :	ONG HAS THE NAMED INSURED BEEN IN BUSINESS? Five Years
SALE	27 DV
	STIMATED (Ensuing Year): 24.000 Ounces of Gold
B) L	AST 5 YEARS: 1991 1990 1989 1988 1987 Ounces: 30,302 33,133 17,160 6,660 0

	Outline the site history including any previous uses of the site and by whom: Open pit heap leach gold and silver mine. Start up in 1987.
	Gold and silver recovery by Merrill-Crowe system. Historic underground
	mining and associated milling occurred from late 1800's to late 1930's.
B)	Briefly describe the operations conducted at the facility, including resemble and by-products: Ore/waste rock is produced from mine by surface
	mining method. Waste rock is delivered to modified valley-fill repository.
	Ore is crushed to 1" size and carried to triple-lined (clay,fml,fml) leach
	pad. A diluted cyanide solution is applied to ore. Dilute cyanide solution
	is piped to plant where gold/silver is recovered.
C)	Give details on any claims or lewsuits against the company, including outcome when applicable: No lawsuits have been filed against Brohm Mining Corporation
	however the technical information project of Rapid City, SD is threatening lo
	action if Brohm Mining Corporation does not obtain a traditional NPDES permi
	from the EPA. Brohm and its legal counsel have been in contact with EPA. and
	it appears the lawsuit may not come to pass.
<b>D)</b>	Describe the Management Organization and identify those managers with
	environmental responsibility (attach organization chart if available):
	See attached organizational chart

E)	Briefly describe any employee training classes held: Employees trained in	
	accordance with 30CFR part 48. Additional training on an "as needed" basis	
	conducted. Separate and unique one time training by vendors (DuPont, DeGussa,	etc
F)	Describe the company's interaction with local, state, and federal authorities: Company official is member of the County LEPC which has recently	
	updated its emergency planning in accordance with "Sarah Title III". Company	
	reports regularly to the County Planning and Zoning administration. Company	
	officials work closely with South Dakota DENR on nearly a daily basis. Other	
•	than MSHA, company dealings with Federal agencies is on a sporadic basis.	
07	ERALL FACILITY OPERATIONS	
A)	Provide a description of the site, including adjacent properties and target populations (attach site plan) See attached site plan. Attachment III.	
B)	Identify nearby water sources, both surface and groundwater:	
	See attached site plan. Attachment III.	
<b>c)</b>	Are there any protected environments in the area (parks, wildlife preserves, etc.)? yes _X_ no	
	If yes, please describe:	

	See Attachment III.
;)	Identify any surface or groundwater uses in the area (drinking wells, etc.):
	No domestic or commercial uses within 1 mile of property boundaries
)	Is public water and sewer available? yes _X no
	Outline the security measures at the facility, describe the facility access points, security system, posted areas: Facility is accessed via private access rethrough main gate located at Administration building operated by remote controlled Access to property is through ancillary routes controlled by fences/locked gates. Ancillary access is primarily by abandoned logging trails. Facility product is under constant video, IR and motion detector type electronic surveillance. Security system is monitored at a remote central monitoring location.
•	List the safety programs presently in place: Employee training is in compliance with 30CFR part 48, additional training on "as-needed" basis supplied in-house or
	by applicable vendors i.e. DuPont, DeGussa, etc. An employee safety incentive
	program is in place.
	Describe the fire safety systems in place: Portable fire extinguishers are locate throughout facility as per regulatory requirements. Plant has dedicated fire-fighting system (standardized hoses, fittings and piping compatible with local fidepartment(s)). Also in place are dedicated fire suppression pumps, back upelect cal system and 60,000 gallon water storage, in accordance with local zoning ordinances and NFPA recommendations.
	Outline the emergency procedures used at the facility: A spill contingency plan
	is in place, updated yearly, facility personnel involved in LEPC. South Dakota
	Mining Association sponsors a Technical Advisory Committee. Several employees
	have EMT status.

.,	Outline the sources of solid and hexardous waste: N/A
•	
	·
)	Describe the storage practices used: N/A
)	Describe the disposal methods used: N/A
)	Is there a manifest system in place (include a recent copy)? yes _X
)	Identify any past storage or disposal practices at the site, including any
	inactive disposal areas: N/A
	·
<b>)</b> .	Is there a wastewater treatment unit on site? yes no
<b>)</b> .	
<b>)</b> .	Is there a wastewater treatment unit on site!yesyno If yes, identify:
<b>)</b> .	

	dis	charge points only. See attached site plan. Attachment IV.
H)	Dea	scribe any lagoons, impoundments, or landfills on site: N/A
I)	Is	incineration done on site? yesX_ no
	•	yes, identify:
	1)	Emission Controls:
	2)	Air Monitoring procedures:
	3)	List permits and attach copies:
SP	ILL	CONTAINMENT AND CONTINGENCY PLANNING
A)	Are	materials stored in drums? X yes no
	If	yes, identify:  See Attachment I. Hydrogen Peroxide, Descalent, Sod
	1)	Type of materials: Cyanide, Fluorospar, Carbon Dioxide, ANFO, Lead Nitr Caustic Soda, Borax, Diatamaceous Earth, L.P. Gas, Zinc, Sulfuric Acid, Sodium Nitrate, Soda Ash, Lime.
	2)	Quantity of materials: Normal operational quantities.
	3)	Description of storage area: See Attachment I.
		$\cdot$

B) Tank Storage: See Attachment I.

	Tank No.	Material	Capacity	Age	A/G or U/G	Diked
		Hydrogen	8,000 gal.			
			1 <u>0,000 ga</u> l.			
	3 & 4	Liquid <u>Propane</u> 1	0- <u>12,000 q</u> al.	_5_yrs.	A/G	No
		Diesel	10,000 gal.	(unknown)	A/G	
	Car	Gasoline bon Dioxide	1,000 gal. 8,000 gal.	(unknown) (unknown)	A/G A/G	Yes No n present at the
C)		underground to		ground pi	ping ever bee	n present at the
			:			
	uo , oo, , ,	oud tapaoan	·	<del>,                                    </del>		
-1	, <del></del>					
נע	is a sbril	r brau abbron	ed and on ill	e (Attach		yesno Attachment V)
_	•				1300	A C CACIMIEN C 1 /
) oti	er conceri	15			. (30)	Acceerment V)
•			located anywh	ere on the		yes X no
A)	Is there a	iny asbestos	located anywh		site?	yes X no
A)	Is there a	iny asbestos			site?	yes X no
A)	Is there a	iny asbestos			2 site?	yes <u>X</u> no
A)	Is there a	iny asbestos	minated mater	ial anywhe	a site?	yes X no
A)	Is there a	iny asbestos		ial anywhe	a site?	yes X no

### 10) ADDITIONAL INFORMATION

- A) Please attach the latest monitoring results for facility effluent discharges, air emissions, landfills, or surface impoundments, including any groundwater data available.

  See Attachments VI & VII.
- B) Please attach a schedule of all storage tanks including the following information: capacity, age, above or below ground, spill containment methods, contents, steel or fiberglass, type of inventory control, testing methods.

### 11) RECORD

	If yes, give details:
I	Please describe any pollution claims during the last 5 years (if none, please to state): None
	<u> </u>
	At the time of signing this application, are you sware of any circumstances which may reasonably be expected to give rise to a claim under the policy?

THE APPLICANT REPRESENTS THAT THE ABOVE STATEMENTS AND FACTS ARE TRUE AND THAT NO MATERIAL FACTS HAVE BEEN SUPPRESSED OR MISSTATED.

### \* NOTICE TO NY APPLICANTS:

Any person who knowingly and with intent to defraud any Insurance Company or other person files an application for insurance containing any false information, or conceals for the purpose of misleading, information concerning any false material thereto, commits a fraudulent insurance act, which is a crime.

COMPLETION OF THIS FORM DOES NOT BIND COVERAGE. APPLICANT'S ACCEPTANCE OF COMPANY'S QUOTATION IS REQUIRED PRIOR TO BINDING COVERAGE AND POLICY ISSUANCE. IT IS AGREED THAT THIS FORM SHALL BE THE BASIS OF THE CONTRACT SHOULD A POLICY BE ISSUED, AND IT WILL BE ATTACHED TO THE POLICY.

Applicant:	Boohne	Mining	Coops.				
		/		9	1.2-92	<u> </u>	
By: Agent/Broker:	Musch a	ice-Posident	Secretary Inc.		·		
Address: 1700				Co	90203		

If an order is received, the application is attached to the policy so it is necessary that all questions be answered in full.

10:03

SD ATTY GEN OFC

45-6B-20.1

id from which overburden has irden, waste rock, mine spoil or I mined which has no overburonds.

12/09/92

sion (8), inserted "the following", and "sand, gypsum, shale".

### the Mine Permit.

permit had not expired for purpose of ing the permit because of holder's fallgage in the extraction of minerals. In stake Mining Co. (1991) 472 NW 2d

### of Attorney General.

for development of pilot plant to test of large-scale operations must be obder this chapter, not chapter 45-6C, Vo. 84-33,

ditional bond or surety not Iny county or first or second prehensive plan and zoning governing mining operations th applicable state laws or nunicipality may not require , required by state law or invironment may not grant a t has complied with all county ned necessary county or city antially complied with the or city permits but has not ly, the board of minerals and conditioned upon the issuance days of the date of the board's ounty or first or second class ing mining operations, any or municipality with regard red by the board of minerals of a permit pursuant to this ie issuance of all necessary

r a permit conditioned upon s until the board of minerals writing that the required the applicant.

ed the term "city" to "first class ," and "second class municipality" i the term "town" to "third class "." Section 2 also substituted "muor "city or town" if the class of the

municipality was not specified. The code commission has implemented this act in this sec-

#### Amendments.

The 1987 amendment rewrote this section. For prior version, see parent volume.

#### Opinions of Attorney General.

A county can enforce compliance with reclamation standards without violating this section by injunctive action to mandate the reclamation activities or criminal enforcement, Opinion No. 86-04.

Any county requirement that a mining operator obtain a permit for a mining operation or file a surety for a mining operation to ensure compliance with the reclamation requirements established by the county as part of its planning and soning ordinance would directly conflict with this section and therefore be preempted, Opinion No. 86-04.

45-6B-5. Application for permit for mining operation. Any person desiring to engage in a mining operation shall make written application to the board of minerals and environment for a permit for each mining operation on forms furnished by the board. The permit, if approved, shall authorize the operator to engage in the mining operation on the affected lands described in his application for the life of the mine. The application shall consist of:

(1) One copy of the application pursuant to § 45-6B-6;

(2) A reclamation plan pursuant to § 45-6B-7 submitted with the appli- $\mathbb{Q}(G \cap B_{\mathbb{R}^{d}}) \to U$ 

(3) An accurate map of the affected lands pursuant to § 45-6B-10 submit-707 ted with the application; and

(4) The application fee pursuant to § 45-6B-14.

(5) A post-closure plan for mine waste disposal facilities.

Source: SL 1982, ch 305, § 5; 1989, ch 306,

Amendments.

The 1989 amendment added subdivision (5).

The second 45-6B-18. Amendment of permit and modifications of operating or reclamation plans - Application fees. At the request of the operator, the board of minerals and environment may issue an amendment to the original permit covering additional contiguous land or making minor modifications of the terms and conditions of the operating or reclamation plans. An application to amend a large scale permit shall include the application fee provided by § 45-6B-14. An application to amend a small scale permit shall include the application fee provided by § 45-6B-55. Carl Bookle raise

Source: SL 1982, ch 305, § 18; 1988, ch 360, § 1.

gairbara .

Amendments. The 1988 amendment added the second and third sentences.

45-6B-20.1. Board may require additional proof of financial assurance from certain operators — Content and amount — Factors for consideration. The board may require any operator whose mining operation employs cyanide leaching or any other chemical or biological leaching process to extract minerals from ore, in addition to the surety required by § 45-6B-20, to file or deposit an additional proof of financial assurance with the board before the issuance of the mining permit in such form as required by the board. Such financial assurance may consist of insurance, cash, company net worth or such other form of security as the board deems adequate to protect the interests of the public. The board shall set the amount of such financial assurance based on the cost of responding to and remediating accidental re45-6B-20.2

10:04

MINING, OIL AND GAS

leases of cyanide or other chemical or biological leaching agents to the environment. In determining the assurance amount for responding to and remediating accidental releases, the board shall consider such factors as the distance to surface water and groundwater resources and their beneficial use classification, the financial and technical capability of the operator to respond to accidental releases, the type and amount of leaching agents to be used by the operator, contingencies and safeguards built into the operating and reclamation plans to lessen the likelihood of accidental releases, and any other site-specific factor related to protection of public health and safety or the environment. The amount of the financial assurance shall be at least equivalent to twenty-five thousand dollars but not more than five hundred thousand dollars. Any operator whose proof of financial assurance is based on company net worth must report to the board yearly the status of the company's net worth.

Source: SL 1989, ch 306, \$ 50.

45-6B-20.2. Time for filing under § 45-6B-20.1. The operator of any existing mining operation that employs cyanide leaching or any other chemical or biological leaching process to extract minerals from ore shall, if required by the board, file or deposit the proof of financial assurance with the board pursuant to § 45-6B-20.1 within one hundred twenty days of the order of the board.

Source: SL 1989, ch 306, § 51.

45-6B-23: Cash or securities in lieu of surety. In lieu of the required surety, the operator may deposit cash or government securities with the board of minerals and environment in an amount equal to that of the required surety on the conditions prescribed in § 45-6B-24.

Source: SL 1982, ch 305, § 23; 1987, ch 323, § 1.

Amendments.

The 1987 amendment deleted the second and third sentences which formerly read: "In the discretion of the board, surety requirements may also be fulfilled by using other lands, property or existing reclaimed areas if owned by the operator in excess of cumulative acres that have been reclaimed under the provisions of this chapter and approved by the board. The board shall file a lien upon any real property accepted as surety pursuant to this section."

45-6B-30. Hearing on application — Time extension — Notice — Time for decision. Upon receipt of an application for a mining operation permit and all fees due from the applicant, the board of minerals and environment shall set a date for the hearing on such application not more than ninety days after the date of filing. However, the board, on request of the applicant, may extend this time limit as reasonably necessary to allow the preparation of a socioeconomic impact study required under § 45-6B-33.1 or for any other reason, except that any time extension exceeding forty-five days shall require the applicant to republish the notice prescribed by § 45-6B-16. If the department determines additional time is needed to review the technical contents of a large scale mining operation permit application, the department and the applicant may negotiate a time extension, not to exceed forty-five days. If the department and applicant are unable to reach agreement on an extension, the

board shall de of any such he filing a protest tion pursuant location of the the proposed mately prior to t 1-26. A final c twenty days of which case the ing. In the ever on the affected may reasonabl

Source: SL 19 320, § 3; 1988, ch

#### Amendments.

The 1987 ament sentence; and delet "pursuant to chapt fourth sentence.

The 1988 amenicant" for "operator"

45-6B-33. Usued for a minin the following co

- (1) Reclama chapter
- (2) Substant
- (3) The land that is § 45-6B
- (4) The prop long-ran watershe areas;
- (5) The biolo jeopardiz the area
- (6) The board the proper pacts of

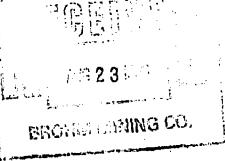
Source: SL 1982, 320, \$ 1; 1989, ch 38

Amendments.

The 1987 amendment and made minor chan style.

The 1989 amendmen





20 August 1993

Rod MacLeod, General Superintendent Brohm Mining Corp. P.O. Box 485 Deadwood, South Dakota 57732

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100 mg (100 mg)
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Re: 1993 Financial Assurance Update for the Gilt Edge Mine

Dear Mr. MacLeod:

On May 21, 1992 the Board of Minerals and Environment in accordance with SDCL 45-6B-20.1 set a financial assurance amount of \$286,000 for the Gilt Edge Mine. On January 20, 1993 the Board accepted corporate surety no. NTD2509514 in the amount of \$286,000 (less 50,000 deductible) with Planet Insurance Company, and a certificate of deposit no. 0261 in the amount of \$50,000 with First Western Bank, Deadwood, as financial assurance for the Gilt Edge Mine. The corporate surety will expired on September 29, 1993.

In order to comply with financial assurance requirements, Brohm Mining will need to submit to this Department a new corporate surety or another type of bonding mechanism acceptable to the Board. Please notify this office if you are considering another type of financial assurance and we can discuss any special requirements.

The Department has also recalculated the financial assurance amount to account for inflation based on the construction cost index (CCI). At the time the original amount was calculated the CCI was 4883.70. The CCI on August 16, 1993 was 5229.94 which represents an increase of approximately seven per cent (7%). The financial assurance would increase to \$306,000.

The Department would like to bring this financial assurance matter before the Board at their next meeting on September 15 and 16, 1993 in Pierre. Please submit the \$306,000 financial assurance before September 15. At this time we plan on handling this financial assurance item with the other routine mining issues. No special hearing is planned.

If you have any questions regarding this matter, please feel free to contact our Office.

Sincerely,

Michael Cepak
Michael Cepak

Michael Cepak
Natural Resources Engineer
Office of Minerals and Mining

## MINVEN GOLD CORPORATION

December 9, 1992

Ms. Roxanne Giedd Office of Attorney General State of South Dakota State Capitol 500 East Capitol Pierre, SD 57501

Dear Ms. Giedd:

Per our discussion, please find enclosed a copy of the full insurance document regarding Brohm's pollution insurance.

If you have any questions, please feel free to contact me.

Sincerely,

Martin Quick

Vice President, Operations

MQ:sg Enclosure Per The from Jenny Hill @ M/M 10/16/92

Banding type deal on \$50K

Purchase of post a \*50K CD payable to the State.

Get the inquires made.



DATE:

**OCTOBER 8, 1992** 

TO:

**JC SOWERS** 

FROM:

JIM BARRON

SUBJECT:

FINANCIAL ASSURANCE (F.A.) FOR GILT EDGE

I have been made aware that you are now handling the F.A. matter in Denver. If this is true, please be aware of the following...

Specified coverage must be for a minimum of \$286,000.00 (US), in contrast to the amount shown in the MinVen August report to the Board.

Finalized coverage must be ready to present to the South Dakota Board of Minerals and Environment (B.M.E.) by November 13, 1992.

However, it is important to note that the Department of Environment and Natural Resources (D.E.N.R.) must first review this coverage in order to make its recommendation to the B.M.E. This review period is anticipated to be approximately two (2) weeks. Therefore, please supply to me complete coverage documentation no later than October 30, 1992 so we may distribute this documentation to the appropriate parties for evaluation.

/vhc

cc:

Martin Quick

一つ(円代に)门 エピィセエィ エフラム MANUE DATE (MM/DD/YY) ER OF HECKWATION ONLY AND THIS CERT FICATE IS ISSUED AN A MAT PRODUCER CONFERS NO RIGHTS UPON THE DESTRECATE HOLDER. THIS CERTIFICATE Marsh & McLennan, Incomporated DOES NOT AMEND EXTEND OR A JURY THE COVERAGE AFFORDED BY THE 1700 Lincoln Street, Suite 4900 POLICIES BELOW Denver, CO 80203 COMPANIES ALFORDING COVERAGE COMPANY A Planet Insurance Company LUTTER COMPAI Y LETTER INBURED COMPANY C BROHM MINING CORFORATION LETTER P.O. Box 485 Deadwood, South Dakota 57732 CONPANY D LETTER COMPANY E LETTER COVERAGES THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSUFED NAMED ASOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY PEQUIPEMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSUFIANCE AFFORDED BY THE POLIC ES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS. EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. BAITE (MANDONN) POL CY EXPIRATION DATE (MM/DD//Y) CO LIWITE POLICY NUMBER TYPE OF INSURANCE GENERAL LIABILITY BEERLY INJURY OCC. COMPREHENSIVE FORM BIDTY INJURY AGG. PROPERTY CAMAGE OC PREMISES/OPERATIONS underground Explosion & Collapse Hazafid PROPERTY DAMAGE AGG. 6 PRODUCTS/COMPLETED OPER. BILL PU COMBINED DCC ŝ BI S AT DOMENTED AGG \$ CONTRACTUAL PERSONAL INJURY AGG. INDEPENDENT CONTRACTORS \$ BROAD FORM PROPERTY DAMAGE PERSONAL INJURY AUTOMOBILE LIABILITY BODILY INJURY (Par prison) ANY AUTO ALL DWNED AUTOS ( Priv. Pass. ) BODILY NUMBER ALL OWNED AUTOS ( Other Than ) (Per po; (dent) HIRED AUTOS PROPERTY CAMAGE NON-OWNED AUTOS BEIDIER INJURY & GARAGE LIABILITY COLASIATIO EACH DICCUPRENCE EXCESS LIABILITY 18 UMBRELLA FORM agnine bate 8 OTHER THAN UMBRELLA FORM

First Party "Claims-Nade" NTD2509514 DESCRIPTION OF PREST IS THE COURTING FOR HELD ENGLANDED AND THE PROPERTY OF TH

9/29/92 9/29/93 286,000 Per Claim <u>286,000 Total All Claims</u>

50,000 SIR

STATUTORY LIVITS

HEITAER -- EACH EMPLOYER ) \$

DISHEAST -- POLICY LIMIT

EACH MIGGIDENT

Certificate Holder is named as an Additional Insured.

State of South Dakota Department of Environment and Natural Resources 523 Each Capitol Pierre, South Dakota 57501.-3181

WORKER'S COMPENSATION

AND

EMPLOYERS' LIABILITY

CERTIFICATE HOLDER

SHOULD ANY OF THE ABOVE DESCRIETE FOILCIES BE CANDELLED BEFORE THE EXPIRATION DATE THEREOF, THE DISCHAGE COMPANY VALL ENDEAVOR TO MAIL 32 DAYS WRITTEN NOTICE TO THE DESTINICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH MUTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KINE UPON THE CONPANY, ITS ABENTS OF REPRESENTATIVES.

AUTHORIS D REFFE BENTATIVE

Marsh & McLennan, Incorporated One United Bank Center 1700 Lincoln Street, Suite 4900 Denver, Colorado 80203-4549 Telephone 303-861-7111

FAX 303 861 8123

September 11, 1992

Marsh & McLennan

Mr. Martin Quick MinVen Gold Corporation 7596 W. Jewell Ave., Suite 303 Lakewood, CO 80232

Re: Brohm Mining Company State of South Dakota

Dear Mr. Quick:

E.C.S.]

This letter is to advise that after a conference call on September 10, with the underwriter at ECS, they have agreed to review your insurance needs and will, in all probability, provide a quotation early next week. This delay is due to the traveling of the underwriters supervisor.

We have been advised that they intend to review the necessary pollution requirements that are being requested by the state of South Dakota. Our office will be in contact with the underwriter on Monday, the 14th, and will advise both you and your corporate office.

Very truly yours,

Patsy J. Earhart Account Executive

cc: Jim Price - MMI
Robert Gilmore - MinVen

Janny Hill

10/01/1992 15:25 MARSH & MoLENNAN DENVER

MARSH & McLENNAN, INCORPORATED

### TELECOMMUNICATIONS COVER PAGE

MARSH & McLENNAN, INCORPORATED One Norwest Center 1700 Lincoln Street, Suite 4900 Denver, Colorado 60203	EQUIPMENT/PHONE NUMBERS:  Primilar MV 300 (303) 861-8123 (28 Hours)  Telephone (303) 861-7111
URGENT	FIOUTINE
TO: NAME: Patty Truckner	NUMBER OF PACIES INCLUDING COVER 22
FIRM: State of South Dale	THE RESERVE THE PROPERTY OF THE PARTY OF THE
FROM: NAME: Juny Hill	FAX: 0: 605-77:3-6035
RE: Brohm Mining Corp	
Brohm effective 9/29/92.	Rus - le convage some ved by Please conjult The standard  y questions his will send you  The receive It from the insirence
	ر برای به در این می این در این در در این در این د
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The information contained in this facsimilis message is confidential, may e privileged, and is intended only for the use of the individual or entity named above. If you, the reactor of the message, are not the intended recipient, or the agent or employee responsible for delivering this impendission to the intended recipient, you are expressly prohibited from copying, disseminating, distributing at in any other way using any of the information contained in this facsimile message.

JUL 13 '92 08:06AM HOMESTAKE GEN OFFICE

P.2 ...

# MARVIN D. TRUHE

FIRST FEDERAL PLAZA . STA F\_DOR PQ. BOX BIDS

RAPID CITY, SOUTH DAKOTA 57708

16 05

July 10, 1992

Mr. James N. Barron Vice President and Operations Manager Brohm Mining Corp. P. O. Box 485 Deadwood, SD 57732

TELECOPIED

Re: Insurance Policy for Environmental Cleanup

Dear Jim:

MARVIN D. TRUHE

DALE R. COCKRELL

This letter will summarize my review of the proposed "Pollution Cleanup Policy" submitted to you by Planet Insurance Company. Enclosed for reference are the "financial assurance" statutes as well as the minutes of the Board of Minerals hearing regarding Brohm's financial assurance obligation.

### General Comment

This is an indemnity policy whereby the insurance company agrees to reimburse Brohm for environmental cleanup costs incurred by Brohm in response to legal obligations imposed by governmental action. Thus, this appears to be a general environmental insurance policy of the type that would allow Brohm to avoid having to pay for a governmental required cleanup following an environmental accident This is not exactly the type of policy we were anticipating. Instead, we were looking for an insurance policy in which coverage would only apply if Brohm was unable or unwilling to respond to the cleanup (due to bankruptcy, financial default, etc.) and the insurance proceeds would then be paid directly to the State (as the State would actually incur the cost of the cleanup). As I mentioned, the premiums for the latter type of policy should be much less than the premiums for the former type of policy. I also question whether the policy as written would be acceptable to the State as the State may have expected to be the named insured in the policy.

Perhaps the best way to proceed would be to advise the insurance company of the specific requirements imposed by the statute and by the Board of Minerals, and then work with them in tailoring a policy that provides that it comes into play only upon Brohm's default, and in that event, the payment is made to the State rather than to Brohm. They may also suggest that the State rather than should be the named insured.

JUL 13 '92 08:07AM HOMESTAKE GEN OFFICE

Mr. James N. B. on Page 2 July 10, 1992

### Specific Comments

- 1. The policy makes repeated references to a "Declarations" section which we do not have, but which you indicated you would try to obtain and forward to me.
- 2. The policy covers only the cleanup of the property that is specifically described in Item 5 of the Declarations. Significantly, the policy will not cover any damage at locations other than those designated in Item 5, even if the damage originates at a designated location. Thus, while the policy covers cleanup of not only land, but also bodies of water, it would not cover a body of water that was not on designated property.
- 3. The policy is limited to cleanup costs. It does not include coverage for the defense of legal proceedings in connection with a violation or the cleanup, nor does it cover damages to the property itself, nor does it cover any damages attributable to any intentional or deliberate actions by Brohm (instead it covers cleanup required as a result of negligence on the part of Brohm).
- 4. Brohm would not be covered for fines or penalties, or for claims by other parties seeking compensatory damages. The latter might involve a landowner suing Brohm for contamination of a water well.
- 5. Take a look at paragraph 4 of "IV. Exclusions" which excludes liability for emissions from mineral or water wells. I do not think this exclusion should be of concern, but you may be aware of some type of chemical contamination that could occur under these circumstances.
- 6. There is a specific exclusion under paragraph 15 of "IV. Exclusions" for liability arising from monitoring and testing following a cleanup. I am assuming that the monitoring and testing that is required as part of the cleanup would be covered, as opposed to any liability for accidents arising out of the testing itself. We should have this clarified with the insurance company since a major part of a cleanup effort can often involve very costly post-accident testing and monitoring.
- 7. There is a specific exclusion for environmental damage which existed prior to the beginning of the policy period, if Brohm was aware or could have reasonably foreseen that the environmental damage already existed. This exclusion should be reviewed in connection with the allegations being made in the threatened CWA litigation.
- 8. There is a "retention amount" which apparently is set forth in Item 4 of Declarations. I assume that this is a deductible that Brohm must pay, after which the insurance company picks up 100 percent of the cleanup costs.

Mr. James N. Barron Page 3 July 10, 1992

9. Under "VI. Limit of Liability" there is a provision that the insurance company's "total liability for all cleanup costs" during the policy period shall not exceed the "annual aggregate" limit as set forth in Item 3 of the Declarations. If the policy period is longer than one year, this would be an improper limitation of the insurance coverage.

Sincerely,

Marvin D. Truhe

MDT:nlb

Enclosures

Brohm Mining Corporation Financial Assurance Hearing: Roxanne Giedd, Assistant Attorney General, represented the Department. Mike Cepak, Office of Minerals and Mining, testified on behalf of the Department.

Marv Truhe, Attorney from Rapid City, represented Brohm Mining Corporation. Jim Barron, Vice President of Brohm and Operations Manager, and Martin Quick, Vice President of SD operations for MinVen, the parent company for Brohm, and Myron Anderson, Environmental Engineer, appeared on behalf of Brohm Mining Corporation.

Mr. Baron, Mr. Quick, and Mr. Anderson were administered the oath by Mr. McCahren.

Mr. Cepak testified regarding the procedure used for calculation of the financial assurance amount for Brohm Mining Corporation. The Department recommended the financial assurance amount be set in the amount of \$303,000. Mr. Cepak noted that the company was not given a reduction for financial ability to respond to releases.

Mr. Arne discussed his assessment of the ability of Brohm Mining Corporation to provide financial assurance for their cyanide operation. He testified that Brohm Mining Corporation does not have the cash recommended by the Department, but Minven, the parent company could put up that amount. Mr. Arne recommended that the financial assurance amount be in the form of cash or a demand note secured by liquid assets.

Mr. Truhe stated that if the Board agrees to allow a demand note secured by the company's net worth, Brohm would not take issue over the dollar amount. However, if the Board decides that the company actually has to pledge a hard asset as collateral the company would disagree. Mr. Truhe stated that he would recommend the amount to be \$150,000.

Mr. Arne answered questions from the Board regarding his opinion of the financial assurance amount.

Mr. Quick and Mr. Barron testified regarding the financial assurance amount and the ability of the parent company, MinVen, to provide financial assurance. They requested that the Board give the company the option of either providing insurance, a surety bond, or letter of credit for a demand note secured by liquid assets

Board discussion took place regarding this matter.

Motion by Sweetman, seconded by Petersen, that the Board require Wharf Resources to submit financial assurance in the form of insurance, a surety bond, or letter of credit for a demand note secured by liquid assets in the amount of \$286,000. Motion carried.

34A-10-2.1. Activity which could result in pollution, contamination or degradation — Requirement of financial assurance authorized — Form and amount. Any person making application to the water management board or the board of minerals and environment for a permit, a license or an extension, amendment or renewal of an existing permit or license, which authorizes activity that could result in a significant risk of pollution, contamination or degradation of the environment and that is not covered by a performance or damage bond or other financial assurance instrument, may be required, as a condition of the permit, to provide financial assurance guaranteeing the performance of corrective actions to contain, mitigate and remediate all pollution, contamination or degradation which may be caused by such activity. The financial assurance in a reasonable and proper amount shall be in a form and an amount approved by the board, and may include, but is not limited to insurance, company net worth considerations, a surety bond, escrow account, letter of credit, trust, guarantee or cash deposit.

Source: SL 1989, ch 306, § 68.

34A-10-2.2. Right and title in bond or security — Form and amount. All right and title in any bond or other security required by the water management board or the board of minerals and environment under any provision of this title. Title 45 or 46 for the protection of the environment or reclamation of lands or other resources shall be in the state until such time as the board by order releases the security. Such bond or other security does not constitute an asset of the person required to provide it, and may not be cancelled, assigned, revoked, disbursed, replaced or allowed to terminate without board approval. The bond or other security shall be in a form and a reasonable and proper amount approved by the board, and may include, but is not limited to surety bond, escrow account, letter of credit, trust, guarantee or cash deposit. The board may permit the use of financial assurance other than a bond, including company net worth considerations. Interest earned on any bond or deposit made under § 34A-10-2.1 shall be returned annually to the person required to provide the bond.

34A-10-2.3. Use of security for cleanup and remediation of environmental problems. The state, with such board or court approval, if any, as is provided in the permit or security instrument required pursuant to § 34A-10-2.1 or 34A-10-2.2, may use the security as necessary for the cleanup and remediation of environmental problems related to the activity for which the security was provided. When such cleanup and remediation is complete, as certified by the board, or sufficient funds have been set aside to achieve complete remediation pursuant to a site-specific, board-approved remedial action plan, the state may proceed against any remaining security for the purpose of collecting any properly recoverable cost incurred by the state in pursuing the cleanup, environmental damages or penalties. Until the environmental cleanup or remediation is complete, any state cost, environmental damage and penalty judgments have been satisfied and the security has been released by the board, the security may not be assigned for the benefit of creditors, attached, garnished, levied or executed on, or subject to process issued from any court; except for the purpose of enabling the state to effectuate the environmental cleanup or remediation.

#### **MEMORANDUM**

DATE:

JUNE 17,1992

TO:

MARTIN QUICK/JIM BARRON

FROM:

MYRON ANDERSEN

After short review of the environmental liability insurance form sent by David Layman, I believe an exclusion in the policy for remediation of soils and groundwater makes the policy not applicable to our need.

Pete Goodwin and I called David Layman on June 12, 1992 and informed him of this, and he said he would inform Marsh McCelland.

It would be necessary to make sure that the policy covers what the financial assurance is for ie: remediation of soils and/or groundwater.

/pls

Attachment III



June 8, 1992

Mr. Tom Durkin SD DENR Joe Foss Building 523 East Capitol Avenue Pierre, SD 57501

Dear Tom:

Enclosed please find the 1992 third quarter water quality data. If you have any questions please contact me.

> Sincerely, **Brohm Mining Corporation**

Stan Michals

Compliance Specialist

Sta Milale

/vhc

#### BROHM MINING CORPORATION

### 3rd Quarter 1992 Water Quality Field Parameters

				. — — — —		
<u>Site</u>	<u>Date</u>	<u>Time</u>	Temp	рH	Cond	<u>DTW</u>
BED-11	05/19/92	03:32	9.5	8.1	510	13.1
BED-15	05/19/92	01:39	12.	10.7	125	58
BED-18	05/18/92	10:30	12.1	6.9	130	221.15
BES-15	05/19/92	02:10	10.1	8.1	570	7.5
BES-17	05/20/92	03:08	9.0	7.0	300	8.3
GW-01	05/18/92	03:36	12.2	7.3	440	NA/PUMP
GW-02	05/18/92	03:10	9.5	6.6	450	7.1
GW-03	05/20/92	12:00	8.3	5.4	1160	SURFACE
GW-04	05/20/92	10:41	10.7	7.8	280	NA/PUMP
GW-05	05/20/92	11:39	8.8	5.5	230	21.3
GW-06	05/19/92	09:34	7.9	7.3	310	14.4
GW-07	05/19/92	09:48	6.2	3.9	1270	10.05
GW-08	05/15/92	02:50	10.5	8.0	440	30.1
GW-09	05/15/92	02:17	13.4	7.7	250	54.1
GW-10	05/18/92	11:31	10.2	7.5	210	210.5
GW-11	05/18/92	02:10	8.7	7.6	210	116.1
GW-12	05/15/92	03:29	9.9	7.1	190	14.15
FD-1	05/27/92	10:00	08.0	6.1	570	9
DW 1+2	05/20/92	11:00	16.9	6.5	390	NA
						Flow GPM
SW-01	05/18/92	01:38	11.7	6.5	30	10
SW-02	05/19/92	02:40	9.8	3.7	1270	148
SW-03	05/26/92	01:15	09.1	8.3	240	1049.5
SW-04	05/19/92	12:35	14.9	7.7	550	2.2
SW-05	05/19/92	03:52	16.7	8.5	190	1830
SW-06	05/20/92	02:31	17.4	6.4	530	130
SW-08	05/26/92	02:18	9.5	8.6	150	1238
SW-11	05/19/92	03:35	6.1	8.4	120	6
SW-28	05/20/92	*	20.5	5.1	860	20 EST.
SW-35	05/12/92		5.3	7.3	730	73

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MYRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: BED-11

DESCRITPION:

SAMPLE DATE: 05,19/92

SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920520110 DATE RECEIVED: 05/20/92 TIME RECEIVED: 07:15 AM

**REPORT DATE: 05/22/92** 

PHYSICAL PROPERTIES	VALUE	METALS mg/l	DISSOLVED	TOTAL
Conductivity, umhos/cm	600.	Aluminum	•	•
Hardness	•	Antimony	•	•
PH	7.35	Arsenic	.003	•
Solids, Dissolved, mg/l	413.	Bariuma	•	•
Solids, Suspended, mg/l	•	Beryllium	•	•
Turbidity, NTU	•	Boron		•
		Cadonium.	.001	
		Calcium	82.2	•
INORGANIC & NONMETALLIC	VALUE	Chromium	•	
		Cobalt	•	•
Alkalinity	•	Copper	.006	•
Bicarbonate	141.	Gold	<.001	•
Carbonate, mg/l	0.0	Iron	•	•
Chloride, mg/l	2.5	Lead	•	•
Cyanide, Total, mg/l	<.010	Lithium	•	•
Cyanide, WAD, mg/l	•	Magnes i um	14.5	•
Cyanide, Free, mg/l	•	Manganese	•	•
Fluoride, mg/l	•	Mercury	•	•
Nitrogen, Ammonia, mg/l	•	Molybdenum	•	•
Nitrogen, Nitrate, mg/l	<.050	Nickel	•	•
Nitrogen, Nitrite, mg/l	•	Potassium	4.24	
Sulfate, mg/l	278.	Selenium.	<.005	•
, <b>3.</b>		Silicon	•	
		Silver	•	•
		Sodium	7.69	•
		Strontium	•	•
		Vanadi um	•	•
		Zinc	.059	•

APPROVED BY:

DATE:  $\frac{5/22/92}{}$ 

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MYRON ANDERSEN
BROHM MINING CORP.
P.O. BOX 485
DEADWOOD, SD 57732

SAMPLE NAME: BED-11

DESCRITPION:

SAMPLE DATE: 05/20/92

SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920521113

DATE RECEIVED: 05/21/92 TIME RECEIVED: 07:00 AM

REPORT DATE: 05/26/92

VALUE	METALS mg/l	DISSOLVED	TOTAL
	Aluminum	•	•
•	Antimony	•	•
•	Arsenic	•	•
	Barium	•	•
•	Beryllium	•	•
•	Boron	•	•
	Cadmium	•	•
	Calcium	•	•
VALUE	Chromium	•	•
	Cobalt	•	•
•	Copper	•	•
•	Cold	•	•
•	Iron	•	•
•	Lead	•	•
•	Lithium	•	
•	Magnes i um	•	•
•	Manganese	•	•
•	Mercury	•	•
	Molybdenum	•	•
<.050	Nickel	•	•
•	Potassium	•	•
•	Selenium	•	•
	Silicon	•	•
	Silver	•	•
	Sodium	•	•
	Strontium	•	•
	Vanadi um	•	•
	Zinc	•	•
	VALUE	Aluminum Antimony Arsenic Barium Beryllium Boron Cadmium Calcium Calcium Calcium Cobalt Copper Cold Iron Lead Lithium Magnesium Manganese Mercury Molybdenum Co50 Nickel Potassium Selenium Silicon Silver Sodium Strontium Vanadium	Aluminum Antimony Arsenic Barium Beryllium Boron Cadmium Calcium Calcium Cobalt Copper Cold Iron Lead Lithium Magnesium Manganese Mercury Molybdenum Selenium Silicon Silver Sodium Strontium Strontium Vanadium

APPROVED BY:

DATE:

5/26/92

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MYRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732

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ACCOUNT NUM LAB NUM DATE RECEI TIME RECEI REPORT D

PHYSICAL PROPERTIES	VALUE	METALS mg/l	DISSOLVED
Conductivity, umhos/cm	1495.	Aluminum	•
Hardness	•	Antimony	•
PH	11.2	Arsenic	<.001
Solids, Dissolved, mg/l	1025.	Barium	•
Solids, Suspended, mg/l	•	Beryllium	•
Turbidity, NTU	•	Boron	•
• .		Cadanium.	.001
		Calcium	80.0
INORGANIC & NONMETALLIC	VALUE	Chromium	•
		Cobalt	•
Alkalinity	•	Copper	.019
Bicarbonate	0.0	Cold	<.001
Carbonate, mg/l	24.0	Iron	•
Chloride, mg/l	12.0	Le <b>a</b> d	•
Cyanide, Total, mg/l	<.010	Lithium	
Cyanide, WAD, mg/l	•	Magnesium	3.31
Cyanide, Free, mg/1	•	Manganese	•
Fluoride, mg/l	•	Mercury	•
Nitrogen, Ammonia, mg/l	•	Molybdenum	•
Nitrogen, Nitrate, mg/l	<.050	Nickel	•
Nitrogen, Nitrite. mg/l	•	Potassium	24.3
Sulfate, mg/l	105.	Selenium	<.005
Juliate, mg/		Silicon	•
		Silver	•
		Sodiam	28.1
		Strontium	
		Vanadium	
		Zinc	.06
			1

SPECIAL TESTS VALUE

HYDROXIDE ALK. 85.0

APPROVED BY:

DATE: \_

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(605) 348-0111

MIRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: BES-15

DESCRITPION:

SAMPLE DATE: 05/19/92

SAMPLE TIME: SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920520112

DATE RECEIVED: 05/20/92 TIME RECEIVED: 07:15 AM

**REPORT DATE: 05/22/92** 

PHYSICAL PROPERTIES	VALUE	METALS mg/l	DISSOLVED	TOTAL
Conductivity, umhos/cm	698.	Aluminum	•	•
Hardness	•	Antimony	•	•
PH	6.94	Arsenic	<.001	•
Solids, Dissolved, mg/l	482.	Barium	•	•
Solids, Suspended, mg/l	•	Beryllium	•	•
Turbidity, NTU	•	Boron	•	•
		Cadmium	.001	•
		Calcium	101.	•
INORGANIC & NONMETALLIC	VALUE	Chromium	•	•
		Cobalt	•	•
Alkalinity	•	Copper	.038	•
Bicarbonate	75.6	Gold	<.001	•
Carbonate, mg/l	0.0	Iron	•	•
Chloride, mg/l	9.00	Lead	•	•
Cyanide, Total, mg/l	<.010	Lithium	•	•
Cyanide, WAD, mg/l	•	.Magnesium	17.1	•
Cyanide, Free, mg/l	•	Manganese	•	•
Fluoride, mg/l	•	Mercury	•	•
Nitrogen, Ammonia. mg/l	•	Molybdenum.	•	•
Nitrogen, Nitrate, mg/l	3.57	Nickel	•	•
Nitrogen, Nitrite, mg/l	•	Potassium	3.95	•
Sulfate, mg/l	282.	Selenium	<.005	•
		Silicon	•	•
		Silver	•	•
		Sodium	7.47	•
		Strontium	•	•
		Vanadi um	•	•
		Zinc	<.050	•

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VALUE

MYRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732

PHYSICAL PROPERTIES

SAMPLE NAME: BES-17

DESCRITPION:

SAMPLE DATE: 05/20/92

SAMPLE TIME: SAMPLED BY:

DISSOLVED

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920521110

TOTAL

DATE RECEIVED: 05/21/92 TIME RECEIVED: 07:00 AM REPORT DATE: 05/26/92

		•		
Conductivity, umhos/cm	374.	Aluminum	•	
Hardness	•	Antimony	•	•
PH	6.56	Arsenic	.036	•
Solids, Dissolved. mg/l	256.	Barium	•	•
Solids, Suspended, mg/l	•	Beryllium	•	•
Turbidity, NTU	•	Boron	•	•
• • • • • • • • • • • • • • • • • • • •		Cadmium	.001	•
		Calcium	49.3	•
INORGANIC & NONMETALLIC	VALUE	Chromium	•	•
		Cobalt	•	•
Alkalinity	•	Copper	.003	•
Bicarbonate	115.	Cold	4.001	•
Carbonate, mg/l	0.0	lron	•	•
Chloride, mg/l	0.0	Lead	•	•
Cyanide, Total, mg/l	1.010	Lithium	•	•
Cyanide, WAD, mg/l		Magnesium	10.3	•
Cyanide, Free, mg/l		Manganese	•	•
Fluoride, mg/l	•	Мегсигу	•	•
Nitrogen, Ammonia, mg/l	•	Molybdenum	•	•
Nitrogen, Nitrate, mg/l	.050	Nickel		
Nitrogen, Nitrate, mg/l	.000	Potassium	5.45	
Sulfate, mg/l	100.	Seleniam	.005	
Surrate, mg/1	100.	Silicon		
		Silver	•	•
QUALITY CONTROL	VALUE	Sodium	4.77	•
QUALITY WATERL	VALCE	Strontium	4.11	•
Maior Asias Sim mag/1	3.97	Vanadi 📶	•	•
Major Anion Sum, meq/L			.070	•
Major Cation Sum, meq/L	3.65	Zinc	.010	•
Anion-Cation Balance, %	-4.10			

METALS mg/l

APPROVID BY: tean (man)

DATE: 5/26/92

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WIRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: BED-18

DESCRITPION:

SAMPLE DATE: 05/18/92 -

SAMPLE TIME: SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920519109

DATE RECEIVED: 05/19/92 TIME RECEIVED: 07:15 AM

REPORT DATE: 05/20/92

PHYSICAL PROPERTIES	VALUE	METALS mg/1	DISSOLVED	TOTAL
Conductivity, umhos/cm	137.	Aluminum	•	•
Hardness	•	Antimony	•	•
PH	6.17	Arsenic	<.001	•
Solids, Dissolved, mg/l	94.0	Barium	.030	•
Solids, Suspended, mg/l	•	Beryllium	•	•
Turbidity, NTU	•	Boron	•	•
• ,		Cadmi um	.002	•
		Calcium	14.1	•
INORGANIC & NONMETALLIC	VALUE	Chromium	.006	•
		Cobalt	•	•
Alkalinity	•	Соррег	.023	•
Bicarbonate	36.6	Gold	<.001	•
Carbonate, mg/l	0.0	Iron	•	•
Chloride, mg/l	2.0	Lead	.030	•
Cyanide, Total, mg/l	<.010	Lithium	•	•
Cyanide, WAD, mg/l	•	Magnesium	3.27	•
Cyanide, Free, mg/l	•	Manganese	•	•
Fluoride, mg/l	.765	Mercury	•	<.0002
Nitrogen, Ammonia, mg/l	•	Molybdenum	•	•
Nitrogen, Nitrate, mg/l	.070	Nickel	•	•
Nitrogen, Nitrite, mg/l	050	Potassium	2.30	•
Sulfate, mg/l	32.1	Selenium	.005	•
		Silicon	•	•
		Silver	.001	•
		Sod i ⊫ani	7.22	•
		Strontium	•	•
		Vanadı:∎m	•	•
		Zinc	.057	•

ALLKOVED BJ:

DATE: \_\_\_\_\_\_\_93

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MYRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: ON-1

DESCRITPION:

SAMPLE DATE: 05/18/92

SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920519101 DATE RECEIVED: 05/18/92 TIME RECEIVED: 07:15 AM

REPORT DATE: 05/20/92

PHYSICAL PROPERTIES	VALUE	METALS mg/l	DISSOLVED	TOTAL
Conductivity, umhos/cm	755.	Aluminum	•	•
Hardness	•	Antimony	•	•
PH	7.12	Arsenic	.003	•
Solids, Dissolved, mg/l	519.	Barium	•	•
Solids. Suspended. mg/l	•	Beryllium	•	•
Turbidity, NTC	•	Boron	•	•
		Cadmi um	.002	•
		Calcium	130.	•
INORGANIC & NONMETALLIC	VALUE	Chromium	•	•
		Cobal t	•	•
Alkalinity	•	Copper	.005	•
Bicarbonate	320.	Gold	<.001	•
Carbonate, mg/l	0.0	Iron	•	•
Chloride. mg/l	2.5	Lead	•	•
Cyanide. Total. mg/l	<.010	Lithium	•	•
Cyanide, WAD, mg/l	•	Magnesium	17.0	•
Cyanide, Free, mg/l	•	Manganese	•	•
Fluoride, mg/l	•	Mercury	•	•
Nitrogen, Ammonia, mg/l	•	Molybdenum	•	•
Nitrogen, Nitrate, mg/l	<.050	Nickel	•	•
Nitrogen, Nitrite, mg/l	•	Potassi 🖚	3.44	•
Silfate, mg/l	133.	Selenium	<.005	•
		Silicon	•	•
		Silver		•
		Sodia	6.42	•
		Strontiam	•	•
		Vanadi um	• • • • • • • • • • • • • • • • • • • •	•
		Zinc	.084	•

APPROVED BY:

DATE:

05-20-91

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MYRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: ON-2

DESCRITPION:

SAMPLE DATE: 05/18/92 -

SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920519102

DATE RECEIVED: 05/19/92 TIME RECEIVED: 07:15 AM REPORT DATE: 05/20/92

PHYSICAL PROPERTIES	VALUE	METALS mg/1	DISSOLVED	TOTAL
Conductivity, umhos/cm	555.	Aluminum		•
Hardness	•	Antimony	•	•
PH	6.16	Arsenic	<.001	•
Solids, Dissolved, mg/l	381.	Barium	•	•
Solids, Suspended, mg/l	•	Beryllium	•	•
Turbidity, NTU	•	Boron	•	•
•		Cadmi um	.002	•
		Calcium	77.0	•
INORGANIC & NONMETALLIC	VALUE	Chromaiuma	•	•
		Cobal t	•	•
Alkalinity	•	Copper	.005	•
Bicarbonate	220.	Cold	<.001	•
Carbonate, mg/l	0.0	Iron	•	•
Chloride, mg/l	5.0	Lead	•	•
Cyanide, Total, mg/l	<.010	Lithiuma	•	•
Cyanide, WAD, mg/l	•	Magnesium	18.2	•
Cyanide, Free, mg/l	•	Manganese	•	
Fluoride, mg/l	•	Mercury	•	•
Nitrogen, Ammonia, mg/l	•	Molybdenum	•	•
Nitrogen, Nitrate, mg/l	<. <b>0</b> 50	Nickel	•	•
Nitrogen, Nitrite, mg/l	•	Potassium	2.47	•
Sulfate, mg/l	112.	Selenium	<.005	•
. 5.		Silicon	•	•
		Silver	•	•
		Sodium	6.96	•
		Strontium	•	•
		Vanadium	•	•
		Zinc	.094	

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DATE

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MIRON ANDERSEN BROIM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: ON-3

DESCRITPION:

SAMPLE DATE: 05, 20/92

SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920521107

DATE RECEIVED: 05, 21, 92
TIME RECEIVED: 07:00 AM

REPORT DATE: 05, 26/92

PHYSICAL PROPERTIES	VALUE	METALS mg/l	DISSOLVED	TOTAL
Conductivity, umhos/cm	1425.	Aluminum	•	•
Hardness	•	Antimony	•	•
PH	5.19	Arsenic	.002	•
Solids, Dissolved, mg/l	983.	Barium	•	•
Solids, Suspended, mg/l	•	Beryllium	•	•
Turbidity, NTC	•	Boron	•	•
		Cadani 🛲	.027	•
		Calcium	234.	•
INORGANIC & NONMETALLIC	VALUE	Chromium	•	•
		Cobal t	•	•
Alkalinity	•	Copper	.070	•
Bicarbonate	12.2	Gold	.002	•
Carbonate, mg/l	0.0	Iron	•	•
Chloride, mg/l	5.50	Lead	•	•
Cyanide, Total, mg/l	<.010	Lithium	•	•
Cyanide, WAD, mg/l	•	Magnes i um	68.5	•
Cyanide, Free, mg/l	•	Manganese	•	•
Fluoride, mg/l	•	Mercury	•	•
Nitrogen, Ammonia, mg/l	•	Molybdenum	•	•
Nitrogen, Nitrate, mg/l	3.84	Nickel	• • • • • • • • • • • • • • • • • • • •	•
Nitrogen, Nitrite, mg/l	•	Potassium	5.04	•
Sulfate, mg/l	840.	Selenium	.006	•
		Silicon	•	•
		Silver	0.72	•
QUALITY CONTROL	VALUE	Sodium	9.73	•
		Strontium	•	•
Major Anion Sum, meq/L	18.10	Vanadium	.906	•
Major Cation Sum, meq/L	17.86	Zinc	. 306	•
Anion-Cation Balance, %	-0.67			

APPROVED BY:	helan juran
	= /26/92

DATE: <u>5/26/92</u>

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MYRON ANDERSEN BROIM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732

PHYSICAL PROPERTIES

SAMPLE NAME: OX-4

DESCRITPION:

SAMPLE DATE: 05/20/92 ·

SAMPLE TIME: SAMPLED BY:

DISSOLVED

ACCOUNT NUMBER: W1000

LAB NIMBER: 10020521109

TOTAL

DATE RECEIVED: 05,21,92 TIME RECEIVED: 07:00 AM REPORT DATE: 05,26,92

Conductivity, umhos/cm	376.	Aluminum	•	•
Hardness	•	Antimony	•	•
PH	7.01	Arsenic	.004	•
Solids, Dissolved, mg/l	258.	Barium	•	•
Solids, Suspended, mg/l	•	Beryllium	•	•
Turbidity, NTU	•	Boron	•	•
		Cadannium.	.001	•
		Calcium	59.7	•
INORGANIC & NONMETALLIC	VALUE	Chromium	•	
		Cobalt	•	•
Alkalinity	•	Copper	.005	•
Bicarbonate	141.	Cold	4.001	•
Carbonate, mg/l	0.0	lron	•	•
Chloride, mg/l	0.0	Leađ	•	•
Cyanide, Total, mg/l	<.010	Lithium	•	
Cyanide, WAD, mg/l	•	Magnesium	6.04	•
Cyanide, Free, mg/l	•	Manganese	•	•
Fluoride, mg/l	•	Mercury	•	•
Nitrogen, Ammonia, mg/l	•	Molybdenum	•	•
Nitrogen, Nitrate, mg/l	.050	Nickel	•	•
Nitrogen, Nitrite, mg/l	•	Potassium	2.11	•
Sulfate, mg/l	84.0	Seleni⊫ma	.005	•
		Silicon	•	•
		Silver	•	•
QUALITY CONTROL	VALUE	Sodium	€.15	•
		Strontium	•	•
Major Anion Sum, meq/L	4.06	\anadi:m	•	•
Major Cation Sum, meq/L	3.80	Zinc	.059	•
Anion-Cation Balance, %	-3.34			

VALUE METALS mg/1

APPROVED EN: Star Maran

DATE: 5/26/92



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MIRON ANDERSEN BROIM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: ON-5

DESCRITPION:

SAMPLE DATE: 05/20,'92 :

SAMPLE TIME: SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NIMBER: 19920521109

DATE RECEIVED: 05, 21, 92 TIME RECEIVED: 07:00 AM REPORT DATE: 05/26/92

PHYSICAL PROPERTIES	VALUE	METALS mg/l	DISSOLVED	TOTAL
Conductivity, umhos/cm	336.	Aluminum		•
Hardness		Antimony	•	•
PH	5.06	Arsenic	.001	•
Solids, Dissolved, mg/l	230.	Barium	•	•
Solids, Suspended, mg/l	•	Beryllium	•	•
Turbidity, NTC	•	Boron	•	•
• .		Cadan i uan	.001	•
		Calcium	33.7	•
INORGANIC & NONMETALLIC	VALUE	Chromium	•	•
		Cobalt	•	•
Alkalinity	•	Copper	.012	•
Bicarbonate	<10.0	Gold	<.001	•
Carbonate, mg/l	0.0	Iron	•	•
Chloride, mg/l	0.50	Lead	•	•
Cyanide, Total, mg/l	<.010	Lithium	•	•
Cyanide, WAD, mg/l	•	Magnesium	7.87	•
Cyanide, Free, mg/l	•	Manganese		•
Fluoride, mg/l	•	Mercury	•	•
Nitrogen, Ammonia, mg/l	•	Molybdenum	•	•
Nitrogen, Nitrate, mg/l	<.050	Nickel	•	•
Nitrogen, Nitrite, mg/I	•	Potassi um	3.41	
Sulfate, mg/1	138.	Selenium	.005	•
		Silicon	•	•
		Silver	•	•
CALITY CONTROL	VALUE	Sodium	1.9€	•
		Strontium	•	•
Major Anion Sum, meq/L	2.88	Vanadium	•	•
Major Cation Sum, meq/L		Zine	.153	•
Anion-Cation Balance, %	-4.58			

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MIRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: CM-6

DESCRITPION:

SAMPLE DATE: 05/19/92

SAMPLE TIME: SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920520108

DATE RECEIVED: 05,720 '92 TIME RECEIVED: 07:15 AM

**REPORT DATE: 05/22/92** 

Conductivity, umhos/cm   390.   Aluminum	PHYSICAL PROPERTIES	VALUE	METALS mg/1	DISSOLVED	TOTAL
Hardness	Conductivity, umhos/cm	390.	Aluminum	•	
Solids, Dissolved, mg/l   268.   Barium		•	Antimony	•	•
Solids, Suspended, mg/l	PH	6.76	Arsenic	.002	•
Turbidity. NTU	Solids, Dissolved, mg/l	268.	Barium	•	•
Cadmium	Solids, Suspended, mg/l	•	Beryllium	•	•
Calcium   40.0   .	•	•	Boron	•	•
INORGANIC & NORMETALLIC			Cadmi um	.002	•
Cobalt   Copper   .007			Calcium	40.0	•
Alkalinity	INORGANIC & NONMETALLIC	VALUE	Chromium	•	•
Bicarbonate   124.4   Gold   4.001   Carbonate, mg/l   0.0   Iron			Cobal t	•	•
Carbonate, mg/l 0.0 Iron	Alkalinity	•	Copper	.007	•
Chloride, mg/l 2.50 Lead	Bicarbonate	124.4	Gold	<.001	•
Cyanide, Total, mg/l < .010 Lithium	Carbonate, mg/l	0.0	lron	•	•
Cyanide, WAD, mg/l . Magnesium 11.8 .  Cyanide, Free, mg/l . Manganese  Fluoride, mg/l . Mercury  Nitrogen, Ammonia, mg/l . Molybdenum  Nitrogen, Nitrate, mg/l  Nitrogen, Nitrite, mg/l  Sulfate, mg/l  Silver	Chloride, mg/l	2.50	Lead	•	•
Cyanide, Free, mg/l . Manganese	Cyanide, Total, mg/l	<.010	Lithiuma	•	•
Fluoride, mg/l . Mercury	Cyanide, WAD, mg/l	•	Magnesium	11.8	•
Nitrogen, Ammonia, mg/l . Molybdenum	Cyanide, Free, mg/l	•	Manganese	•	•
Nitrogen, Nitrate, mg/l <.050 Nickel	Fluoride, mg/l	•	Mercury	•	•
Nitrogen, Nitrite, mg/l . Potassium 3.37 .  Sulfate, mg/l 110. Selenium 4.005 .  Silicon  Silver  Sodium 6.76 .  Strontium	Nitrogen, Ammonia, mg/l	•	Molybdenum	•	•
Sulfate, mg/l       110.       Selenium       4.005       .         Silicon       .       .       .         Silver       .       .       .         Sodium       6.76       .       .         Strontium       .       .       .         Vanadium       .       .       .	Nitrogen, Nitrate, mg/l	<.050	Nickel	•	•
Silicon	Nitrogen, Nitrite, mg/l	•	Potassium		•
Silver Sodium 6.76	Sulfate, mg/l	110.	Selenium	<.005	•
Sodium 6.76 . Strontium Vanadium				•	•
Strontium			Silver	•	•
Vanadrum			Sodium	6.76	•
			Strontium	•	
_,			Vanadium	•	
Zinc <.050 .			Zinc	<.050	•

APPROVED	Bi:	Melan	14-31
		~ /-	/

DATE: \_\_\_\_

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MYRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: OX-7

DESCRITPION:

SAMPLE DATE: 05/19/92 .

SAMPLE TIME: SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920520109

DATE RECEIVED: 05/20/92 TIME RECEIVED: 07:15 AM REPORT DATE: 05/22/92

PHYSICAL PROPERTIES	VALUE	METALS mg/1	DISSOLVED	TOTAL
Conductivity, umhos/cm	1502.	Aluminum	•	•
Hardness	•	Antimony	•	•
PH	3.17	Arsenic	.030	•
Solids, Dissolved, mg/l	1032.	Barium	•	•
Solids, Suspended, mg/l	•	Beryllium	•	•
Turbidity, NTU	•	Boron	•	•
•		Cadini um	.029	•
		Calcium	97.0	•
INORGANIC & NONMETALLIC	VALUE	Chronsium	•	•
		Cobalt	•	•
Alkalinity	•	Copper	4.06	•
Bicarbonate	0.0	Gold	<.001	•
Carbonate, mg/l	0.0	Iron	•	•
Chloride, mg/l	15.0	Lead	•	•
Cyanide, Total, mg/l	₹.010	Lithium	•	•
Cyanide, WAD, mg/l		Magnesium	33.4	•
Cyanide, Free, mg/l		Manganese	•	•
Fluoride, mg/l	•	Mercury	•	•
Nitrogen, Ammonia, mg/l	•	Molybdenum	•	•
Nitrogen, Nitrate, mg/l	1.16	Nickel	•	•
Nitrogen, Nitrite, mg/l	•	Potassium	1.29	•
Sulfate, mg/l	870.	Selenium	<,005	•
	•	Silicon	•	•
		Silver	•	•
		Sodium	9.41	•
		Strontium	•	•
		Vanadi um	•	•
		Zinc	2.35	•

APPROVED BY: Tream land

DATE:  $\frac{5/22/92}{}$ 

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MYRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: ON-8

DESCRITPION:

SAMPLE DATE: 05/15/92 .

SAMPLE TIME: SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920519105 DATE RECEIVED: 05/19/92 TIME RECEIVED: 07:15 AM

**REPORT DATE: 05/20/92** 

PHYSICAL PROPERTIES	VALUE	METALS mg/l	DISSOLVED	TOTAL
Conductivity, umhos/cm	620.	Aluminum	•	•
Hardness	•	Antimony	•	•
PH	7.20	Arsenic	.004	•
Solids, Dissolved, mg/l	425.	Barium	.046	•
Solids, Suspended, mg/l	•	Beryllium	•	•
Turbidity, NTU	•	Boron	•	•
•		Cadom i umo	<.001	•
		Calcium	80.9	•
INORGANIC & NONMETALLIC	VALUE	Chromium.	.006	•
		Cobal t	•	•
Alkalinity	•	Copper	.011	•
Bicarbonate	127.	Gold	<.001	•
Carbonate, mg/l	0.0	Iron	•	•
Chloride, mg/l	3.0	Lead	.023	•
Cyanide, Total, mg/l	<.010	Lithium	•	•
Cyanide, WAD, mg/l	•	Magnesium	12.2	•
Cyanide, Free, mg/l	•	Manganese	•	•
Fluoride, mg/l	.279	Mercury	•	<.0002
Nitrogen, Ammonia, mg/l	•	Molybdenum	•	•
Nitrogen, Nitrate, mg/l	1.46	Nickel	•	•
Nitrogen, Nitrite, mg/l	<.050	Potassium	15.6	•
Sulfate, mg/l	211.	Selenium.	<.005	•
		Silicon	•	•
		Silver	.002	•
		Sodium	18.3	•
		Strontium	•	•
		Vanadium	•	•
		Zinc	<.050	•

APPROVED BY:

DATE:

S-20-92

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MIRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: CA-9

DESCRITPION:

SAMPLE DATE: 05/15/92 ·

SAMPLE TIME: SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920519106

DATE RECEIVED: 05/19/92 TIME RECEIVED: 07:15 AM

**REPORT DATE: 05/20/92** 

PHYSICAL PROPERTIES	VALUE	METALS mg/l	DISSOLVED	TOTAL
Conductivity, umnhos/con	315.	Aluminum	•	•
Hardness	•	Ant imony	•	•
PH	6.47	Arsenic	.001	•
Solids, Dissolved, mg/l	217.	Barium	.066	•
Solids, Suspended, mg/l	•	Beryllium	•	•
Turbidity, NTU	•	Boron	•	•
• ,		Cadimi um	<.001	•
		Calcium	42.9	•
INORGANIC & NONMETALLIC	VALUE	Chromium	.002	•
		Cobalt	•	•
Alkalinity	•	Copper	.019	•
Bicarbonate	65.9	Gold	<.001	•
Carbonate, mg/l	0.0	Iron	•	•
Chloride, mg/l	2.5	Lead	.011	•
Cyanide, Total, mg/l	<.010	Lithium	•	•
Cyanide, WAD, mg/l	•	Magnes i um	4.87	•
Cyanide, Free, mg/l	•	Manganese	•	•
Fluoride, mg/l	.762	Mercury	•	<.0002
Nitrogen, Ammonia, mg/l	•	Molybdenum	•	•
Nitrogen, Nitrate, mg/l	.155	Nickel	•	•
Nitrogen, Nitrite, mg/l	<.050	Potassiumo	1.60	•
Sulfate, mg/l	96.3	Selenium	<.005	•
		Silicon	•	•
		Silver	.001	•
		Sodiumo	5.41	•
		Strontium	•	•
		Vanadi um	•	•
		Zinc	.065	•

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MYRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: OW-10

DESCRITPION:

SAMPLE DATE: 05/18/92

SAMPLE TIME: SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920519108 DATE RECEIVED: 05/19/92 TIME RECEIVED: 07:15 AM

REPORT DATE: 05/20/92

PHYSICAL PROPERTIES	VALUE	METALS mg/l	DISSOLVED	TOTAL
Conductivity, umnhos/cm	302.	Aluminum	•	•
Hardness	•	Antimony	•	•
PH	6.71	Arsenic	.012	•
Solids, Dissolved, mg/l	207.	Barium	.026	•
Solids, Suspended, mg/l	•	Beryllium	•	•
Turbidity, NTU	•	Boron	•	•
• •		Cadenium	<.001	•
		Calcium	36.3	•
INORGANIC & NONMETALLIC	VALUE	Chromium	.004	•
		Cobalt	•	•
Alkalinity	•	Copper	.012	•
Bicarbonate	129.	Gold	<.001	•
Carbonate, mg/l	0.0	Iron	•	•
Chloride, mg/l	3.0	Lead	.017	•
Cyanide, Total, mg/l	<.010	Lithium	•	•
Cyanide, WAD, mg/l	•	Magnesium	7.67	•
Cyanide, Free, mg/l	•	Manganese	•	•
Fluoride, mg/l	.370	Mercury	•	<.0002
Nitrogen, Ammonia, mg/l	•	Molybdenum	•	•
Nitrogen, Nitrate, mg/l	<.050	Nickel	•	•
Nitrogen, Nitrite, mg/l	<.050	Potassium	1.14	•
Sulfate, mg/l	59.3	Selenium.	<.005	•
		Silicon	•	•
		Silver	<.001	•
		Sodium	7.47	•
		Strontium	•	•
		Vanadium	•	•
		Zinc	.077	•

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DATE:

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SWELE NAME: OF SAMPLE DATE: 05/18/92 DESCRITPION: SAMPLE TIME: SAMPLED BY: COUNT MARBER: W1000
19920519103
LAB NUMBER: 05/19/92
LAB NUMBER: 07:15 AM
DATE RECEIVED: 07:15/20/92
TIME RECEIVED: 05/20/92 ACCOUNT NUMBER: W1000 Box 3388 . Rapid City. SD 57709 35) 3A8.0111 3 CORP. TOTAL 51732 კე DISSOLVED SD METALS DE !! .013 Aluminum Antimony VALUE Arsenic. (.001 Barium Beryllium 387. HOPERTIES 52.E vity, unhos/on č0. r Boron Cadmi m č00. 566. Calcium Dissolved, mell Chromium (.001 Copali Cobber co1d idity, KT 6.71 Itou RCANIC & WARETALLIC Lead Lithium Magnesium 115.0 Markanese 0.8 1.70 Hercury 010ء Molybdenia €00°. Alkalinity Cyanide, Total, mell Cyanide, Total, mell Cyanide, Free, Cyanide, Free, Bicarbonate Carbonate, mg/ Hickel Polassium Selenium 8.94 Cyanide, rree, mg/l
Fluoride, mg/l
Nitrogen, Nitrate, mg/l
Nitrogen, Nitrate, mg/l
Nitrogen, mg/l
Sulfate. silicon ر.050 silver .098 Sodiu 92.6 Strontium Vanadium zinc Sulfale, mell APPROVED BY: DATE:

## MID-CONTINENT TESTING LABORATORIES, INC. HIGH TECHNOLOGY OIL ANALYSIS AND ENVIRONMENTAL TESTING

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MYRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: ON-12

DESCRITPION:

SAMPLE DATE: 05/15/92

SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920519107

DATE RECEIVED: 05,19/92 TIME RECEIVED: 07:15 AM REPORT DATE: 05/20/92

PHYSICAL PROPERTIES	VALUE	METALS mg/1	DISSOLVED	TOTAL
Conductivity, umhos/cm	279.	Aluminum		•
Hardness	•	Antimony	•	•
PH	6.06	Arsenic	<.001	•
Solids, Dissolved, mg/l	192.	Barium	.032	•
Solids, Suspended, mg/l	•	Beryllium	•	•
Turbidity, NTU	•	Boron	•	•
		Cadmium	.001	•
		Calcium	37.8	•
INORGANIC & NONMETALLIC	VALUE	Chromium	.004	
		Cobalt	•	
Alkalinity	•	Copper	.005	•
Bicarbonate	51.2	Gold	<.001	
Carbonate, mg/l	0.0	Iron	•	
Chloride, mg/l	3.0	Lead	.020	•
Cyanide, Total, mg/l	<.010	Lithium	•	•
Cyanide, WAD, mg/l		Magnesium	4.10	•
Cyanide, Free, mg/l	•	Manganese	•	•
Fluoride, mg/l	.226	Mercury	•	<.0002
Nitrogen, Ammonia, mg/l		Molybdenum	•	
Nitrogen, Nitrate, mg/l	.050	Nickel	•	
Nitrogen, Nitrite, mg/l	<.050	Potassium	1.37	•
Sulfate, mg/l	88.9	Selenium	<.005	
Juliutely Lig/1	00.0	Silicon		
		Silver	<.001	•
		Sodium	4.40	•
		Strontium	•	
		Vanadium	-	
		Zinc	<.050	

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MYRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: FD-1

DESCRITPION:

**SAMPLE DATE: 05/27/92** 

SAMPLE TIME: SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920528108 DATE RECEIVED: 05/28/92

TIME RECEIVED: 10:15 AM

REPORT DATE: 06/01/92

PHYSICAL PROPERTIES	VALUE	METALS mg/1	DISSOLVED	TOTAL
Conductivity, umhos/cm	748.	Aluminum	•	
Hardness	•	Antimony	•	•
PH	5.85	Arsenic	<.001	<.001
Solids, Dissolved, mg/l	510.	Barium	•	•
Solids, Suspended, mg/l	₹10.0	Beryllium	•	•
Turbidity, NTU		Boron	•	•
•		Cadmuum	.002	.003
		Calcium	117.	
INORGANIC & NONMETALLIC	VALUE	Chromium	•	•
		Cobalt	•	•
Alkalinity	•	Соррег	.003	.005
Bicarbonate	56.1	Gold	<.001	<.001
Carbonate, mg/l	0.0	Iron	•	•
Chloride, mg/l	3.50	Lead	•	•
Cyanide, Total, mg/l	<.010	Lithium	•	•
Cyanide, WAD, mg/l	<.010	Magnes i um	25.4	•
Cyanide, Free, mg/l	•	Manganese	•	•
Fluoride, mg/l	•	Mercury	•	•
Nitrogen, Ammonia, mg/l	•	Molybdenum	•	•
Nitrogen, Nitrate, mg/l	1.61	Nickel	•	•
Nitrogen, Nitrite, mg/l	•	Potassium	•	•
Sulfate, mg/l	266.	Selenium	<.005	<.005
		Silicon	•	•
		Silver	•	•
		Sodium	7.96	•
		Strontium	•	•
		Vanadium	•	•
		Zinc	.287	.389

DATE: 6-1-92

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MYRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: DW 1 & 2

DESCRITPION:

SAMPLE DATE: 05/20/92

SAMPLE TIME: SAMPLED BY:

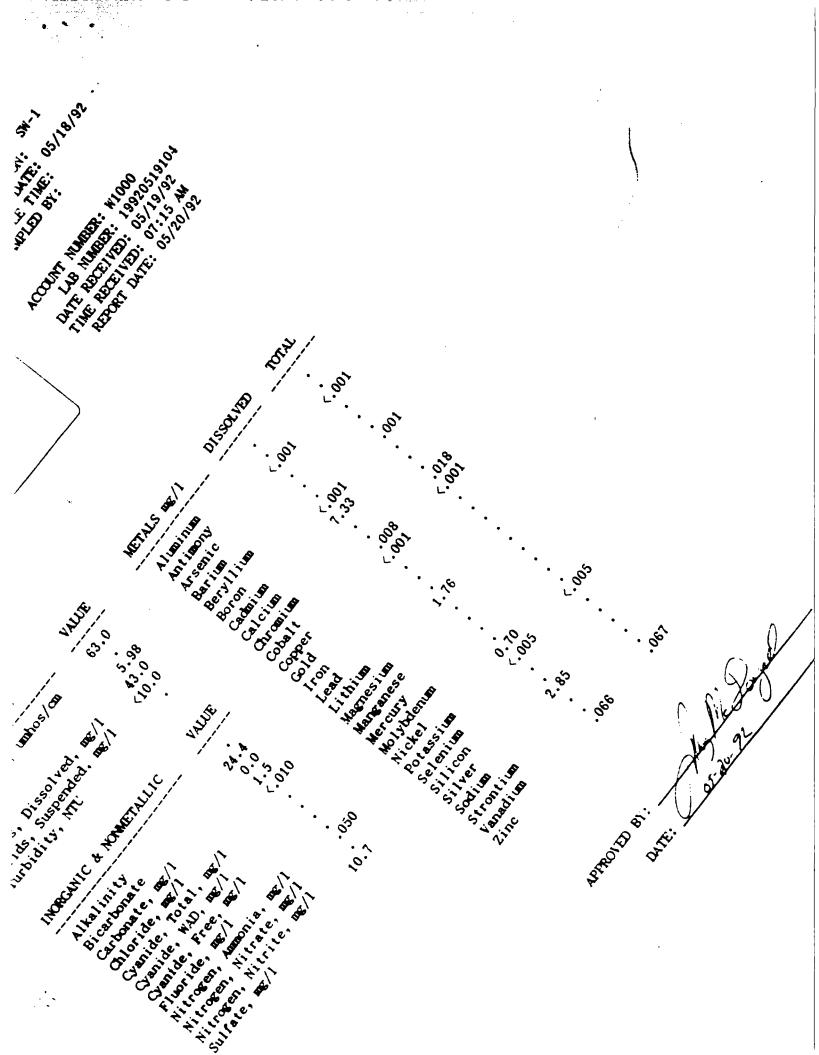
ACCOUNT NUMBER: W1000

LAB NUMBER: 19920521111 DATE RECEIVED: 05/21/92 TIME RECEIVED: 07:00 AM REPORT DATE: 05/26/92

PHYSICAL PROPERTIES	VALUE	METALS mg/l	DISSOLVED	TOTAL
Conductivity, umhos/cm	489.	Aluminum	•	•
Hardness	•	Antimony	•	•
PH	6.12	Arsenic	<.001	•
Solids, Dissolved, mg/l	336.	Barium	•	•
Solids, Suspended. mg/l	•	Beryllium	•	
Turbidity, NTU	•	Boron	•	
• ,		Cadmium	.005	
		Calcium	55.3	•
INORGANIC & NONMETALLIC	VALUE	Chromium	•	•
		Cobalt	•	•
Alkalinity	•	Copper	.007	•
Bicarbonate	58.6	Cold	<.001	•
Carbonate, mg/l	0.0	Iron	•	•
Chloride, mg/l	9.00	Lead	•	•
Cyanide, Total, mg/l	<.010	Lithium	•	•
Cyanide, WAD, mg/l	•	Magnes i um	16.4	•
Cyanide, Free, mg/l	•	Manganese	•	•
Fluoride, mg/l	•	Mercury	•	•
Nitrogen, Ammonia. mg/l	•	Molybdenum	•	•
Nitrogen, Nitrate, mg/1	7.80	Nickel	•	•
Nitrogen, Nitrite, mg/1	•	Potassium	1.88	•
Sulfate, mg/l	138.	Selenium	<.005	•
		Silicon	•	•
		Silver	•	•
QUALITY CONTROL	VALUE	Sodium	10.4	•
		Strontium	•	•
Major Anion Sum, meq/L	4.64	Vanadium	. •	•
Major Cation Sum, meq/L Anion-Cation Balance, %	4.61 -0.37	Zinc	1.15	•

APPROVED BY:

5/26/92



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MIRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: SW-2

DESCRITPION:

SAMPLE DATE: 05/19/92 -

SAMPLE TIME: SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920520115

DATE RECEIVED: 05/20/92 TIME RECEIVED: 07:15 AM

**REPORT DATE: 05/22/92** 

PHYSICAL PROPERTIES	VALUE	METALS mg/l	DISSOLVED	TOTAL
Conductivity, umhos/cm	1600.	Aluminum	•	•
Hardness	•	Antimony	•	•
PH	3.11	Arsenic	.016	.023
Solids, Dissolved, mg/l	1095.	Barium	•	•
Solids, Suspended, mg/l	<b>~10.</b>	Beryllium	•	•
Turbidity, NTU	•	Boron	•	•
•		Cadani uma	.022	.027
		Calcium	135.	•
INORGANIC & NONMETALLIC	VALUE	Chromium	•	•
		Cobal t	•	•
Alkalinity	•	Copper	2.25	2.35
Bicarbonate	0.0	Cold	.002	.002
Carbonate, mg/l	0.0	lron	•	•
Chloride, mg/l	10.0	Lead	•	•
Cyanide, Total, mg/l	<.010	Lithiuma	•	•
Cyanide, WAD, mg/l	•	Magnes i um	39.7	•
Cyanide, Free, mg/l	•	Manganese	•	•
Fluoride, mg/l	•	Mercury	•	•
Nitrogen, Ammonia, mg/l	•	Molybdenum		•
Nitrogen, Nitrate, mg/l	2.06	Nickel	•	•
Nitrogen, Nitrite, mg/l	•	Potassium.	2.18	•
Sulfate, mg/l	889.	Selenium	<.005	<.005
,		Silicon	•	•
		Silver	•	•
		Sodium	8.49	•
		Strontium		•
		Vanadi um	•	•
		Zinc	1.61	1.85

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MYRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: SW-3

DESCRITPION:

SAMPLE DATE: 05/26/92

SAMPLE TIME: SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920527201 DATE RECEIVED: 05/27/92

TIME RECEIVED: 07:15 AM REPORT DATE: 05/29/92

Conductivity, umhos/cm 295. Aluminum .  Hardness . Antimony .  PH 7.22 Arsenic .011  Solids, Dissolved, mg/l 202. Barium .  Solids, Suspended, mg/l <10.0 Beryllium .  Turbidity, NTU . Boron .  Cadmium .003  Calcium .003  Calcium .003  Calcium .003  Alkalinity . Copper .037  Bicarbonate . 80.5 Gold	TOTAL
Hardness   .	•
PH   7.22   Arsenic   .011	•
Solids, Dissolved, mg/l   202.   Barium   .	.013
Solids, Suspended, mg/l	•
Turbidity, NTU . Boron	•
Cadmium   .003	•
INORGANIC & NORMETALLIC VALUE Chromium .  Cobalt .  Alkalinity . Copper .037  Bicarbonate 80.5 Gold <.001  Carbonate, mg/l 0.0 Iron .	.003
Alkalinity . Copper .037 Bicarbonate 80.5 Gold <.001 Carbonate, mg/l 0.0 Iron	•
Cobalt   Copper   C	•
Bicarbonate 80.5 Gold <.001 Carbonate, mg/l 0.0 Iron	•
Bicarbonate 80.5 Gold <.001 Carbonate, mg/l 0.0 Iron	.118
Carbonate, mg/l 0.0 Iron	<.001
· •	•
CHAVA AUCT HEALA	•
Cyanide, Total, mg/l <.010 Lithium .	•
Cyanide, WAD, mg/l . Magnesium 9.51	•
Cyanide, Free, mg/l . Manganese .	•
Fluoride, mg/l . Mercury .	•
Nitrogen, Ammonia, mg/l . Molybdenum	•
Nitrogen, Nitrate, mg/l .094 Nickel .	•
Nitrogen, Nitrite, mg/l . Potassium 2.04	•
Sulfate, mg/l 103. Selenium <.005	<.005
Silicon	•
Silver .	•
Sodium 3.03	•
Strontium .	•
Vanadium	•
Zinc .095	.158

APPROVED BY:

DATE: 05-29-5

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MYRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: SW-4

DESCRITPION:

SAMPLE DATE: 05/19/92

SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920520113 DATE RECEIVED: 05/20/92 TIME RECEIVED: 07:15 AM REPORT DATE: 05/22/92

PHYSICAL PROPERTIES	VALUE	METALS mg/l	DISSOLVED	TOTAL
Conductivity, umhos/cm	677.	Aluminum	•	•
Hardness	•	Antimony	•	•
PH	6.85	Arsenic	.001	.002
Solids, Dissolved, mg/l	463.	Barium	•	•
Solids, Suspended, mg/l	5.0	Beryllium	•	•
Turbidity, NTU	•	Boron	•	•
	•	Cadmium	<.001	<.001
		Calcium	89.3	•
INORGANIC & NONMETALLIC	VALUE	Chromium	•	•
		Cobalt	•	•
Alkalinity	•	Copper	.010	.014
Bicarbonate	83.0	Gold	<.001	<.001
Carbonate, mg/l	0.0	Iron	•	•
Chloride, mg/l	8.50	Lead	•	•
Cyanide, Total, mg/l	<.010	Lithium	•	•
Cyanide, WAD, mg/l	•	Magnesium	18.9	•
Cyanide, Free, mg/l	•	Manganese	•	•
Fluoride, mg/l	•	Mercury	•	•
Nitrogen, Ammonia, mg/l	•	Molybdenum	•	•
Nitrogen, Nitrate, mg/l	1.01	Nickel	•	•
Nitrogen, Nitrite, mg/l	•	Potassium	3.62	•
Sulfate, mg/l	262.	Selenium	<.005	<.005
,		Silicon	•	•
		Silver	•	•
		Sodium	6.76	•
		Strontium	•	•
		Vanadium	•	•
		Zinc	<.050	<.050

APPROVED BY: rean Gurani DATE: 5/22/92 2100 S. 7th. Suite 211 • PO. Box 3388 • Rapid City, SD 57709 (605) 348-0111

MIRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: SW-5

DESCRITPION:

SAMPLE DATE: 05/19/92

SAMPLE TIME: SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920520114 DATE RECEIVED: 05/20/92 TIME RECEIVED: 07:15 AM REPORT DATE: 05/22/92

PHYSICAL PROPERTIES	VALUE	METALS mg/l	DISSOLVED	TOTAL
Conductivity, umhos/cm	267.	Aluminum	•	•
Hardness	•	Antimony	•	•
PH	7.18	Arsenic	<.001	.003
Solids, Dissolved, mg/l	184.	Barium	•	•
Solids, Suspended, mg/l	<10.	Berylliuma	•	•
Turbidity, NTU	•	Boron	•	•
• ,		Cadani um	<.001	<.001
		Calcium	28.7	•
INORGANIC & NONMETALLIC	VALUE	Chromium	•	•
		Cobalt	•	•
Alkalinity	•	Copper	.005	.006
Bicarbonate	75.6	Gold	<.001	€.001
Carbonate, mg/l	0.0	iron	•	•
Chloride, mg/l	7.00	Lead	•	•
Cyanide, Total, mg/l	<.010	Lithium	•	•
Cyanide, WAD, mg/l	•	.Magnes i um	8.38	•
Cyanide, Free, mg/l	•	Manganese	•	•
Fluoride, mg/l	•	Mercury	•	•
Nitrogen, Ammonia, mg/l	•	Molybdenum	•	•
Nitrogen, Nitrate, mg/l	.114	Nickel	•	•
Nitrogen, Nitrite, mg/l	•	Potassium	2.39	•
Sulfate, mg/l	70.4	Selenium	<.005	<.005
, <b>,</b>		Silicon	•	•
		Silver	•	•
		Sodiums	3.16	•
		Strontium	•	•
		Vanadi um	•	•
		Zinc	<.050	.064

APPROVED BY:

DATE: 5/22/92

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MIRON ANDERSES BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: SM-€

DESCRITPION:

SAMPLE DATE: 05/20/92 -

SAMPLE TIME: SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 10920521106

DATE RECEIVED: 05/21/92 TIME RECEIVED: 07:00 AM REPORT DATE: 05/26/92

PHYSICAL PROPERTIES	VALUE	METALS mg/l	DISSOLVED	TOTAL
Conductivity, umhos/cm	626.	Aluminum	•	
Hardness	•	Antimony	•	•
PH	5.81	Arsenic	.001	.010
Solids, Dissolved, mg/l	430.	Barium	•	•
Solids. Suspended. mg/l	10.	Berylli m	•	
Turbidity, NTU	•	Boron	•	•
• •		Cadimuum	.010	.011
		Calciumo	75.4	•
INORGANIC & NONMETALLIC	VALUE	Chromium	•	•
		Cobalt	•	•
Alkalinity	•	Copper	.193	.234
Bicarbonate	17.1	Gold	4.001	.001
Carbonate, mg/l	0.0	lron	•	•
Chloride, mg/l	5.00	Lead	•	•
Cyanide, Total, mg/l	<.010	Lithium	•	•
Cyanide, WAD, mg/l	•	Magnesium	17.6	•
Cyanide, Free, mg/l	•	.Manganese	•	•
Fluoride, mg/l	•	Mercury	•	•
Nitrogen, Ammonia, mg/l	•	Molybdenum	•	•
Nitrogen, Nitrate, mg/l	.598	Nickel	•	•
Nitrogen, Nitrite, mg/l	•	Potassium	3.09	•
Sulfate, mg/l	286.	Selenium	.005	005
		Silicon	•	•
		Silver	•	•
		Sodium	5.55	•
		Strontium	•	•
		\anadiums	•	•
		Zinc	.608	.005

APPROVED)	BY:	Man	 ۲,	272.

DATE: 5/26/92

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MYRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: SW-8

DESCRITPION:

**SAMPLE DATE: 05/26/92** 

SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920527202

DATE RECEIVED: 05/27/92 TIME RECEIVED:

**REPORT DATE: 05/29/92** 

PHYSICAL PROPERTIES	VALUE	METALS mg/l	DISSOLVED	TOTAL
Conductivity, umhos/cm	193.	Aluminum	•	•
Hardness		Ant imony	•	•
PH	7.02	Arsenic	.004	.006
Solids, Dissolved, mg/l	132.	Bariuma	•	•
Solids, Suspended, mg/l	<10.0	Berylliuma	•	•
Turbidity, NTU		Boron	•	•
• •		Cadmi um	<.001	<.001
		Calcium	19.5	•
INORGANIC & NONMETALLIC	VALUE	Chromium	•	•
		Cobalt	•	•
Alkalinity	•	Copper	.009	.015
Bicarbonate	92.72	Gold	<.001	<.001
Carbonate, mg/l	0.0	Iron	•	•
Chloride, mg/l	8.00	Lead	•	•
Cyanide, Total, mg/l	<.010	Lithium	•	•
Cyanide, WAD, mg/l	•	Magnesium	6.82	•
Cyanide, Free, mg/l	•	Manganese	•	•
Fluoride, mg/l	•	Mercury	•	•
Nitrogen, Ammonia, mg/l	•	Molybdenum	•	•
Nitrogen, Nitrate, mg/l	<.050	Nickel	•	•
Nitrogen, Nitrite, mg/l	•	Potassium	1.95	•
Sulfate, mg/l	17.6	Selenium	<.005	<.005
		Silicon	•	•
		Silver	•	•
		Sodium	2.39	•
	•	Strontium	•	•
		Vanadi um	•	•
		Zinc	<.050	<.050

APPROVED BY:

DATE: 05- 29-

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(605) 348-0111

MYRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: SW-11

DESCRITPION:

SAMPLE DATE: 05/19/92

SAMPLE TIME: SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920520116 DATE RECEIVED: 05/20/92

TIME RECEIVED: 07:15 AM

**REPORT DATE: 05/22/92** 

PHYSICAL PROPERTIES	VALUE	METALS mg/l	DISSOLVED	TOTAL
Conductivity, umhos/cm	196.	Aluminum	•	•
Hardness	•	Ant imony	•	•
PH	7.28	Arsenic	<.001	<.001
Solids, Dissolved, mg/l	134.	Barium	•	•
Solids, Suspended, mg/l	<10.	Beryllium	•	•
Turbidity, NTU	•	Boron	•	•
		Cadani um	<.001	<.001
		Calcium	25.8	•
INORGANIC & NONMETALLIC	VALUE	Chromium	•	•
		Cobalt	•	•
Alkalinity	•	Copper	.005	.016
Bicarbonate	102.	Gold	<.001	<.001
Carbonate, mg/l	0.0	Iron	•	•
Chloride, mg/l	0.50	Lead	•	•
Cyanide, Total, mg/l	<.010	Lithium	•	•
Cyanide, WAD, mg/l	•	Magnes i um	4.23	•
Cyanide, Free, mg/l	•	Manganese	•	•
Fluoride, mg/l	•	Mercury	•	•
Nitrogen, Ammonia, mg/l	•	Molybdenum	•	•
Nitrogen, Nitrate, mg/l	.050	Nickel	•	•
Nitrogen, Nitrite, mg/l	•	Potassium	1.20	•
Sulfate, mg/l	21.4	Selenium	<.005	<.005
		Silicon	•	•
		Silver	•	•
		Sodium	1.75	•
		Strontium	•	•
		Vanadi u <b>m</b>	•	•
		Zinc	< <b>.0</b> 50	<.050

APPROVED BY:

DATE: \_\_\_\_

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MYRON ANDERSEN BROHM MINING CORP. P.O. BOX 485 DEADWOOD, SD 57732 SAMPLE NAME: SW-28

DESCRITTION:

SAMPLE DATE: 05/20/92 `

SAMPLE TIME: SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920521105

DATE RECEIVED: 05/21/92 TIME RECEIVED: 07:00 AM

**REPORT DATE: 05/26/92** 

PHYSICAL PROPERTIES	VALUE	METALS mg/l	DISSOLVED	TOTAL.
Conductivity, umhos/cm	791.	Aluminum	•	•
Hardness	•	Ant imony	•	•
PH	5.66	Arsenic	.003	.004
Solids, Dissolved, mg/l	543.	Barium	•	• .
Solids. Suspended. mg/l	10.	Beryllium	•	•
Turbidity, NTU	•	Boron	•	•
•		Cadmi um	.009	.010
		Calcium	90.4	•
INORGANIC & NONMETALLIC	VALUE	Chromium	•	•
		Cobal t	•	•
Alkalinity	•	Copper	.150	.156
Bicarbonate	7.32	Cold	<.001	<.001
Carbonate, mg/l	0.0	Iron	•	•
Chloride, mg/l	4.50	Lead	•	•
Cyanide, Total, mg/l	<.010	Lithium	•	•
Cyanide, WAD, mg/l	•	Magnes i um	28.63	•
Cyanide, Free, mg/l	•	Manganese	•	•
Fluoride. mg/l	•	Mercury	•	•
Nitrogen, Ammonia, mg/l	•	Molybdenum	•	•
Nitrogen, Nitrate, mg/l	.345	Nickel	•	•
Nitrogen, Nitrita, mg/l	•	Potassium	7.14	•
Sulfate, mg/l	373.	Selenium	√.005	.005
		Silicon	•	•
		Silver	•	•
		Sodi⊯ma	3.13	•
		Strontium	•	•
		Vanadium	•	•
		Zinc	.674	.709

APPROVED BY:

DATE: 5/26/92

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MYRON ANDERSEN BROHM MINING CORP. P.O. BOX 485

DEADWOOD. SD 57732

SAMPLE NAME: SW-35

DESCRITPION:

SAMPLE DATE: 05/11/92

SAMPLE TIME: SAMPLED BY:

ACCOUNT NUMBER: W1000

LAB NUMBER: 19920513121 DATE RECEIVED: 05/13/92 TIME RECEIVED: 06:50 AM

**REPORT DATE: 05/14/92** 

PHYSICAL PROPERTIES	VALUE	METALS mg/l	DISSOLVED	TOTAL.
Conductivity, umhos/cm	910.	Aluminum	•	•
Hardness	•	Antimony	<.001	•
PH	5.94	Arsenic	<.001	.002
Solids, Dissolved, mg/l	624.	Barium	.111	•
Solids, Suspended, mg/l	<10.0	Beryllium	•	•
Turbidity, NTU	•	Boron	•	•
		Cadmi um	<.001	<.001
		Calcium	124.	•
INORGANIC & NONMETALLIC	VALUE	Chromium	.015	•
		Cobalt	•	•
Alkalinity	14.0	Copper	.008	.008
Bicarbonate	17.1	Gold	<.001	<.001
Carbonate, mg/l	0.0	Iron	•	•
Chloride, mg/l	15.0	Lead	.014	•
Cyanide, Total, mg/l	<.010	Lithiumo	•	•
Cyanide, WAD, mg/l	•	Magnesium	26.5	•
Cyanide, Free, mg/l		Manganese	.013	•
Fluoride, mg/l	<.050	Mercury	•	<.0002
Nitrogen, Ammonia, mg/l	•	Molybdenum	<.001	•
Nitrogen, Nitrate, mg/l	6.96	Nickel	.004	•
Nitrogen, Nitrite, mg/l	<.050	Potassium	5.28	•
Sulfate, mg/l	289.	Selenium	<.005	<.005
		Silicon	•	•
		Silver	<.001	•
		Sodium	12.1	•
		Strontium	•	•
		Vanadium	•	•
		Zinc	.098	.116

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QUARTERLY

AIR QUALITY AND METEOROLOGICAL

DATA SUMMARY OF THE

GILT EDGE MINE

JANUARY 1992 - MARCH 1992

Prepared For:

BROHM MINING CORPORATION

DEADWOOD, SOUTH DAKOTA

Prepared By:

JAMES W. GELHAUS

CONSULTING METEOROLOGIST

TOWNSEND, MONTANA 59644

### CERTIFICATION OF REPORT INTEGRITY

This report represents an accurate summary of air quality and meteorological conditions measured around the Gilt Edge Mine at Deadwood, South Dakota. Every effort was made to obtain accurate and representative data and to comply with procedures set forth in the <u>Quality Assurance Handbook for Air Pollution Measurement Systems; Volume III, Ambient Air Specific Methods (EPA 600/4-77-027a).</u>

James W. Gelhaus

James W. Lelhous

Consulting Meteorologist

Date: May 14, 1992

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4.	AMBIENT AIR QUALITY STANDARDS FOR PM-10 SUSPENDED PARTICULATES	6
5.	SURFACE WIND SUMMARY STATISTICS	8
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# QUARTERLY AIR QUALITY AND METEOROLOGICAL DATA SUMMARY OF THE GILT EDGE MINE

### I. INTRODUCTION

Operational air quality and meteorology monitoring was conducted during the first quarter of 1992 around the Gilt Edge Mine near Deadwood, South Dakota. The monitoring data presented in this report covers primarily the period January 1, 1992 through March 31, 1992. The monitoring activities conducted by Brohm Mining Corporation consisted of two sites (see Table 1): a meteorological station, and two air quality monitoring stations. Parameters monitored at the meteorological station included wind speed, wind direction, wind sigma, temperature, precipitation, The wind sensors were mounted on top of a ten and evaporation. meter tower. The precipitation measurements were taken using a tipping bucket gage mounted at ground level. The air quality monitoring stations consisted of PM-10 air samplers which monitored 10 micron or smaller suspended particulate concentrations.

TABLE 1

AIR QUALITY AND METEOROLOGY MONITORING SITES

Site	Elevation*	Location	Parameters Monitored
Meteorology	5720	R4E T4N NE 1/4 of SE 1/4 of Sec. 6	Wind Speed Wind Direction Temperature Precipitation Evaporation
Anchor Hill (Site A)	5720	R4E T4N NE 1/4 of SE 1/4 of Sec. 6	PM-10 Suspended Particulates
Joe King (Site B)	5280	R4E T4N NW 1/4 of NW 1/4 of Sec. 8	PM-10 Suspended Particulates

<sup>\*</sup> Feet above sea level.

AND SO BY IDEST MENTILL WINTING CO.

### II. QUALITY ASSURANCE

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All sampling and analysis followed EPA and State of South Dakota quality assurance procedures. All suspended particulate samples were corrected to reference conditions as sequired by EPA. Calibrations of the air quality samplers were performed on the air samplers every ten wasks, at which thms, the samplers were cleaned, inspected, and preventative maintanance provided. Calibrations were made using a variable resistance calibration orifice. The orifice was calibrated by the Montana Department of Health and Environmental Sciences on February 4, 1992. Results of the field calibrations are anchosed in Appendix A.

Results of the precision and accuracy checks for the air quality monitors are shown in Table 2. Precision checks are based on comparison of co-located sampler results from the Golden Sunlight Mine and the Montana Cunnels Mine. Results of the latest quarter of sampling have shown an average difference of 10.8 and -3.1 for the Montana Tunnels Mine and Golden Sunlight Mine, respectively.

TABLE 2

DATA ASSESSMENT REPORT FOR AIR QUALITY DATA

Brohm Mining Corporation

		<u>Precision</u>			Accuracy	
Pollutant	Site	No. of Co-located Samples	95% L Lower	imit Upper	Audit Date	Percent Inaccuracy
PM-10	A				03/16/92	0.7
PM-10	В				03/16/92	1.4
PM-10	4000 +	10	-11.1	4.9	02/03/92	3.6
PM-10	1A *	14	-8.1	29.6	01/28/92	0.0

<sup>+</sup> Co-located sampler precision data from Golden Sunlight Mine.

<sup>\*</sup> Second site co-located sampler precision results from the Montana Tunnels Mine as required in the March 19, 1986 Federal Register.

### III. AIR QUALITY DATA SUMMARY

Measurements of PM-10 suspended particulates during 1992 are summarized in Table 3. Appendix B lists the individual results of the PM-10 suspended particulate data collection for 1992. In Table 3 the maximum twenty-four hour PM-10 concentration was 27 ug/m³. This is compared to the South Dakota and Federal twenty-four hour PM-10 standard of 150 ug/m³ (Table 4). The maximum arithmetic average PM-10 concentration was 10 ug/m³. This is compared to the South Dakota and Federal PM-10 standard of 50 ug/m³.

TABLE 3

SUMMARY OF THE PM-10 SUSPENDED PARTICULATE DATA - 1992

DEADWOOD, SD

BROHM MINING CORPORATION

SITE	MAXIMUM	SECOND HIGH	ARITHMETIC AVERAGE	NO. OF SAMPLES
Α	16.	10.	6.	14
В	27.	18.	10.	12

Values in micrograms per cubic meter.

TABLE 4

AMBIENT AIR QUALITY STANDARDS

PM-10 SUSPENDED PARTICULATES

(Values in micrograms per cubic meter)

Time Period	South Dakota PM-10	Federal PM-10
	<del></del>	
24-Hour	150 *	150 *
Annual	50 a	50 a

- \* Not to be exceeded more than once per year.
- + Geometric average, not to be exceeded.
- a Arithmetic average of quarterly averages, not to be exceeded.

### IV. METEOROLOGICAL DATA SUMMARY

Wind speed, wind direction, wind sigma, and temperature were measured at Site A using Climatronics Corporation sensors and a Campbell Scientific Inc. 21X data logger. Hourly average values are presented in Appendix C. Also shown in Appendix C are monthly summaries of the data including wind frequency diagrams; wind speed and direction frequency tables; and various summary statistics such as average speed, resultant speed and direction, and persistence.

Table 5 summarizes the wind statistics for 1992. Shown in the table are the average wind speed, the first and second most frequent wind directions, the resultant wind speed and direction, and the wind persistence. During the quarter, wind speeds were moderate to strong, highest in March (14.3 mph) and lowest in February (7.1 mph). The most frequent wind direction was from the northwest. The resultant wind also was from the northwest averaging approximately 5 mph. The wind persistence averaged 60 percent.

TABLE 5
SURFACE WIND SUMMARY STATISTICS - 1992

	Average	Most Frequent	Second Frequent	Res	ultant	Persistence
Month	Speed (mph)	Direction	Direction	Speed	Direction	(Percent)
<del></del>						
January	8.2	NW	WNW	6.9	307.9	84.2
February	7.1	NW	NNW	4.3	305.6	60.4
March	14.3	NW	NNW	5.3	307.6	36.8

### V. DATA RECOVERY

Table 6 lists the data recovery for the data collection during the quarter. PM-10 sampling data recovery varied from 75 to 87 percent for the two sites. The meteorological data recovery was 100 percent. The PM-10 data losses were due to double exposed filters.

### VI. SUMMARY

The first quarter 1992 data collection was completed with fair to good data recovery. Particulate levels were well within both the Federal and South Dakota PM-10 air quality standards. Meteorological data revealed northwest wind directions as being the most frequent at moderate to strong wind speeds. EPA quality assurance procedures were followed on all data collection.

TABLE 6

DATA RECOVERABILITY

Brohm Mining Corporation

January 1992 - March 1992

Variable	Total Periods	Total Measurements	Percentage Recovered
Particulates			
PM-10 - A	16	14	87.5
PM-10 - B	16	12	75.0
Wind Speed/ Wind Direction	2184	2184	100.0

# APPENDIX A

# QUALITY ASSURANCE

Brohm Mining Corporation Deadwood, SD

Air Sampler Calibrations, Audits

### JAMES W. GELHAUS

### Consulting Meteorologist

P.O. Box 1196 • Townsend, MT 59644 • (406) 266-4486 • FAX (406) 266-5634

LOCATION:	Bro -16-92	shim Mi	'ni'na (	Corp. A- Anchor	Hill
SAMPLER TYPE FLOW CONTRO ORIFICE (SN)	PE(SN): OLLER TYPE( ):	Sier SN): BGI I	rra PW Sierra nc. 2-7	1-10 MFC 6 (JG-1)	
ORIFICE EQU	UATION Q=	a(x) <sup>b</sup> a	: 0.64;	773 b:_	0.48904
OBSERVER(S)	):	Gelha	u.S.	(AUDIT; (AUDIT; (	CALIBRATION) CALIBRATION)
TR = 2 FILTER VACUUM FILTER GASKET PREVENTIVE	R CARTRIDGE M HOSE CRAC R RIGHT SID IS IN GOOD MAINTENANC	STED 2 WING NUTS KED? E UP? CONDITION? E: Repla	S TIGHT?	YES / 1 YES / 1 YES / 1 YES / 1 YES / 1	NO_NO_NO_NO_NO_NO_NO_NO_NO_NO_NO_NO_NO_N
		<u>2</u>	AUDIT		
<u>P1</u>	<u>P2</u>	TOTAL-P	TR	Q(ORIFICE)	O(CALIBR.) *
1 2.25	2.15	4.40	41.0	1.3368	1.3272
* FROM PREV	JIOUS CALIB	RATION.			
		CALI	BRATION		
<u>P1</u>	<u>P2</u>	TOTAL-P	<u>TR</u>	O(ORIFICE)	O(CALIBR.)
1 2.95	2.85	5.80	51.0	1.5302	1.5352
				1.3878	
3 1.95	1.90	3.85	42.5	1.2523	1.2488
4 1.55	1.50	3.05	38.5	1.1175	1.1141
5 1.30	1.25	2.55	36.0	1.0238	1.0299
	CORRELATIO	N COEFFICI	ENT R =	0,9997	
Q = a(				b = -0.	

### JAMES W. GELHAUS

### Consulting Meteorologist

P.O. Box 1196 • Townsend, MT 59644 • (406) 266-4486 • FAX (406) 266-5634

LOCATION:_ DATE:3	Bro -16-92	hm Min	ANPIER:	rp. B- Jae	King
SAMPLER TY FLOW CONTRO ORIFICE (SN	PE(SN): OLLER TYPE	5, c	erra f ierra 1 c. 2-76	M-10 UFC (JG-1)	<i></i>
ORIFICE EQ	UATION Q:	=a(x) <sup>b</sup> a	: 0.64	223 b:_	0.48904
OBSERVER(S	): <i>J</i> .	Gelhai	u.s		ALIBRATION)
TR = 1 FILTEN VACUUN FILTEN GASKET	R CARTRIDG! M HOSE CRAC R RIGHT SI! IS IN GOOD	JSTED E WING NUT CKED? DE UP? CONDITION	O S TIGHT?	YES N YES N YES N	0
alea	ued + lu	bricate	ed boun	ce plate.	- Jusices,
TEMPERATURI	E: <u>10,5</u> 6	F) BAROM	ETRIC PRES	sure: <u>24.55</u> (	in Hg mm Hg)
		į	AUDIT		
<u>P1</u>	<u>P2</u>	TOTAL-P	TR	O(ORIFICE)	<pre>Q(CALIBR.) *</pre>
1 1.95	1.90	3.85	42.0	1.2523	1,2351
* FROM PREV	OUS CALIE	BRATION.			
		CAL	IBRATION		
<u>P1</u>	<u>P2</u>	TOTAL-P	TR	O(ORIFICE)	O(CALIBR.)
1 3.30	3.20	6.50	54.5	1.6179	1.6168
2 2.75	2.65	5.40	50.0	1.4776	1.4835
3 2.35	2.25	4.60	46.0	1.3662	1.3649
4 1.90	1.80	3.70	41.0	1.2282	1.2167
5 1,50	1.40	2.90	37.0	1.0902	1.0982
	CORRELATIO	N COEFFIC	ENT R =	0.9993	
Q = a(		a =	-	b = 0,00	

### High Volume Orifice Certification

### 276-JG

The high volume orifice was certified on 2/4/92 using a positive displacement rootsmeter located in the Cogswell Building in Helena, MT. The certification and calculations were performed by Robert Jeffrey, Quality Assurance Coordinator. The certification of the orifice was completed using procedures described in Section 3.2.1 of the AQB's Montana Q A Manual. A copy of these procedures is available upon request.

### Results:

Barometric Pressure: 662.4

Temperature: +23.0 C

Example Calculations, Run #1

FLOW STD = F1Th(P.C) = 
$$1.761 \sqrt{\frac{662.43 \times 298}{-----}} = 1.650 \text{ M3/MIN}$$

The original worksheets are included for your inspection.

Please note that the flow is reported at Helena as well as standard conditions. The Federal Register requires the concentrations be reported at flow rates referenced to standard atmospheric conditions (25 degrees C, 760 mm Hg).

### Summary of Results:

	Flow The	oretical	(FT)	
Manometer	Ft3/min	M3/min	` '	K
6.8	62.2	1.761		0.17200
9.1	71.8	2.033		0.17196
7.8	66.7	1.889		0.17225
5.9	58.4	1.653		0.17273
5.0	53.8	1.523		0.17349
4.1	48.9	1.384		0.17320
3.0	41.9	1.186		0.17438
2.1	35.4	1.002		0.17437

K mean: 0.17305

K Std Dev: 0.985E-03

Where K = a constant in the equation:

A calculation of K serves as a quality control check. (See p. 5 of Section 3.2.1 of the MT Q A Manual).

The following table lists the results with the flow corrected to standard conditions (760 mm and 25 C), according to the equation:

$$Qr = FT / \frac{Pi (298)}{(760) Ti}$$

Where: Qr = M3/min referenced to standard conditions
Pi = barometric pressure in mm at laboratory conditions

Ti = temperature in degrees Kelvin at laboratory conditions

Manometer 6.8 9.1 7.8 5.9 5.0 4.1	Lab Flow FT (M3/min) 1.761 2.033 1.889 1.653 1.523 1.384	Standard Flow Qr (M3/min) 1.650 1.905 1.769 1.548 1.427 1.296
4.1	1.384	1.296
3.0	1.186	1.111
2.1	1.002	0.938

The results can be plotted on graph paper to determine a line. A more accurate interpretation expresses the results in a mathematical equation in the form Y=AX to the B power as follows.

M3/min = A(Manometer)^B

A = 0.64773

B = 0.48904

r = 0.99997

The regression coefficient (r) suggests that the line is accurate enough for prediction purposes.

NOTE: This equation is based on flows referenced to standard conditions. An equation utilizing a square root function rather than a power function is included on the Certification Worksheet.

### ORIFICE CERTIFICATION WORKSHEET

Date: 2/4/92

1.427

1.296

1.111

0.938

53.85

44.03

65.01

45.72

Orifice #: Z76-JG

5.00

4.14

3.00

2.14

5

6

Run #	Orifice Manometer	Flow Theofts/Min	oretical M3/Min	К	Q Ref M3/Min	Roots Mano MM HG
1	6.80	62.18	1.761	0.17200	1.650	18.89
2	9.07	71.80	2.033	0.17196	1.905	25.51
3	7.80	66.69	1.889	0.17225	1.769	34.43
4	5.94	58.36	1.653	0.17273	1.548	25.96

1.523

1.384

1.186

1.002

0.17349

0.17320

0.17438

0.17437

Barometric Pressure: 662.43 MM Temperature: +23.0 C

K Mean: 0.17305 K Standard Deviation: 0.985E-03

53.78

48.86

41.87

35.36

<pre>Q = A(Manometer)^B Power Curve Coefficients To Standard</pre>	<pre>Q = A(SQR(Manom))+B Square Root Coefficients To Standard</pre>	Power Curve Coefficients To Helena
A=0.64773 B=0.48904	A=0.62238 B=0.03060	A=0.69146 B=0.48904
r=0.99997	r=0.99997	r=0.99997

% Difference since previous certification: -0.50%

### Example Calculations:

Flow Theoretical = RV/Time = 
$$\frac{194.30}{-----}$$
 = 62.18 Ft3/Min (or 1.761 M3/Min) 3.125

Flow Std = FlTh(P.C) = 1.761 
$$\sqrt{\frac{662.43 \times 298}{-----}}$$
 = 1.650 M3/Min 760 x 296.0

# High Volume Orifice Certification G162-JG

The high volume orifice was certified on 2/4/92 using a positive displacement rootsmeter located in the Cogswell Building in Helena, MT. The certification and calculations were performed by Robert Jeffrey, Quality Assurance Coordinator. The certification of the orifice was completed using procedures described in Section 3.2.1 of the AQB's Montana Q A Manual. A copy of these procedures is available upon request.

### Results:

Barometric Pressure: 662.4 Temperature: +23.4 C

Example Calculations, Run #1

FLOW STD = FlTh(P.C) = 
$$2.014\sqrt{\frac{662.43 \times 298}{760 \times 296.4}}$$
 = 1.885 M3/MIN

The original worksheets are included for your inspection.

Please note that the flow is reported at Helena as well as standard conditions. The Federal Register requires the concentrations be reported at flow rates referenced to standard atmospheric conditions (25 degrees C, 760 mm Hg).

### Summary of Results:

	Flow The	pretical	(FT)	
Manometer	Ft3/min	M3/min	•	K
9.0	71.1	2.014		0.17116
6.9	62.5	1.771		0.17134
7.9	67.0	1.897		0.17219
6.0	58.8	1.666		0.17252
4.9	52.8	1.496		0.17233
4.0	47.9	1.356		0.17255
2.9	41.0	1.161		0.17354
2.0	34.3	0.971		0.17393

K mean: 0.17244

K Std Dev: 0.953E-03

Where K = a constant in the equation:

A calculation of K serves as a quality control check. (See p. 5 of Section 3.2.1 of the MT Q A Manual).

The following table lists the results with the flow corrected to standard conditions (760 mm and 25 C), according to the equation:

$$Qr = FT \sqrt{\frac{Pi (298)}{-----}}_{(760) Ti}$$

Where: Qr = M3/min referenced to standard conditions
Pi = barometric pressure in mm at laboratory conditions

Ti = temperature in degrees Kelvin at laboratory conditions

Lab Flow	Standard Flow
FT (M3/min)	Qr (M3/min)
2.014	1.885
1.771	1.658
1.897	1.775
1.666	1.559
1.496	1.400
1.356	1.269
1.161	1.087
0.971	0.909
	FT (M3/min) 2.014 1.771 1.897 1.666 1.496 1.356 1.161

The results can be plotted on graph paper to determine a A more accurate interpretation expresses the results in a magnetic equation in the form  $\hat{Y}=AX$  to the B power as follows.

 $M3/min = A(Manometer)^B$ 

A = 0.64430B = 0.49008

The regression coefficient (r) suggests that the line is enough for prediction purposes.

NOTE: This equation is based on flows referenced to sta NOTE: This equation is pased on Hows referenced to State conditions. An equation utilizing a square root function work than a power function is included on the Certification Work

# ORIFICE CERTIFICATION WORKSHEET

Date: 2/4/9

Orifice #: G162-JG

Run	Orifice	Flow The	oretical		Q Ref	Root
#	Manometer	Ft3/Min	M3/Min	K	M3/Min	MM
1	8.97	71.11	2.014	0.17116	1.885	25
2	6.92	62.53	1.771	0.17134	1.658	19
3	7.86	66.97	1.897	0.17219	1.775	32
4	6.04	58.82	1.666	0.17252	1.559	25
5	4.88	52.81	1.496	0.17233	1.400	54
6	4.00	47.87	1.356	0.17255	1.269	44
7	2.90	41.00	1.161	0.17354	1.087	63
8	2.02	34.29	0.971	0.17393	0.909	46

Barometric Pressure: 662.43 MM Temperature: +23

K Mean: 0.17244 K Standard Deviation: 0.953E-03

Q = A(SQR(Manom)) + B	
Square Root	Power C
Coefficients	Coeffic
To Standard	To Hele
A=0.62183	A=0.
B=0.02667	B=0.
r=0.99994	r=0.
	Square Root Coefficients To Standard A=0.62183 B=0.02667

% Difference since previous certification: -0.77%

### Example Calculations:

Flow Theoretical = RV/Time = 
$$\frac{192.18}{----}$$
 = 71.11 Ft3/Min (o: 2.703

Flow Std = FlTh(P.C) = 
$$2.014 \sqrt{\frac{662.43 \times 298}{-----}} = 1.885 \text{ M3}.$$

MINE: Brohm Mining Corp.

Qtr: First

1992

### FILTER COMMENTS FOR QUARTERLY REPORTS

Date Filter Number Comments

Anchor Hill - Site A

01/01/92 Invalid - Double Exposure

01/07/92

Joe King - Site B

01/01/92 Invalid - Double Exposure

01/07/92

# APPENDIX B

# AIR QUALITY DATA

Brohm Mining Corporation Deadwood, SD PM-10 Suspended Particulate Data

### PM-10 SUSPENDED PARTICULATE SUMMARY

Location: BROHM MINING CORP.

Site: A - ANCHOR HILL SAROAD ID: 007J02

Year: 1992

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	0ct	Nov	Dec	Year
1	_	_	4	_	_	-	-	_	_	_	_	_	
1 2 3 4	-	_	_	_	_	_	_	_	-	_	_	_	
3	_	_	_	-	_		-	_	-	-	-	_	
4	-	-	_	_	_	-	-	-	-	-	-	-	
5 6 7	-	-	-	-	-	-	-	_	-	_	_	-	
6	-	6	-	-	-	-	-	_	-	-	-	-	
7	-	-	5	-	-	-	-	-	-	-	-	-	
8 9 10	-	-	-	-	-	-	-	-	-	-	-	-	
9	-	~	_	-	-	-	-	-	-	-	-	-	
10	-	-	-	-	-	-	-	_	-	-	-	-	
11	-	-	_	-	-	-	-	-	-	-	-	-	
12	-	2	_	-	~	-	-	-	-	-	-	-	
13	4	-	5	-	-	-	-	-	-	-	-	-	
14 15	-	_	-	_	_	_	_	-	_	-	_	_	
16	-	<del>-</del> .	_		_	_		_	_	_	_	_	
17	_	_	_	_	_	_	_	_	_	_	_	_	
18	_	9	_	_	_	_	_	_	_	~	_	_	
19	6	_	7	_	-	_	_	_	_	_	_	_	
20	-	_	, _	_	_	_	_	_	-	_	_	_	
21	_	_	_	_	_	_	_	_	_	_	_	_	
22	_	_	_	_	_	-	_	_	_	_	_	_	
23	_	~	_	_	_	_	_	_	_	_	_	_	
24	_	4	_	_	_	_	_	_	_	_	_	_	
25	4	_	16	_	-	_	_	_	_	_	_	-	
26	_	_	-	_	-	_	_	_	-	_	_	-	
27	-	_	_	_	_	-	_	-	_	_	_	-	
28	_	-	-	_	-	_	-	_	-	-	-	-	
29	-	-	-	_	-	-	-	-	-	-	-	-	
30	-	-	-	-	-	_	-	-	-	-	-	-	
31	4	-	10	-	-	-	-	-	-	-	-	_	
Max	6	9	16	0	0	0	0	0	0	0	0	0	16
Avg		5	8	0	Ō	Ŏ	Ö	Ō	Ŏ	0	0	0	6
Samples	4	4	8 6	0	0	0	0	0	0	0	0	0	14

# PM-10 SUSPENDED PARTICULATE SUMMARY

Location: BROHM MINING CORP.

Site: B - JOE KING SAROAD ID: 008J02

Year: 1992

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	0ct	Nov	Dec	Year
1	-	_	5	-	_	_	-	_	-	_	_	_	
2	_	-	_	_	_	-	_	_	-	-	-	_	
3	-	_	-	_	_	_	-	_	_	-	_	-	
4	_	-	_	_		-	-	_	-	_	-	_	
5	-	-	-	-	-	-	-	-	-	_	-	-	
1 2 3 4 5 6 7	_	27	-		-	_	-	-	-	-	-	_	
7	-	-	5	-	-	-	-	-	-	-	-	-	
8	-	_	-	-	-	-	-	_		-	-	_	
9	-	-	-	-	-	-	-	-	-	-	-	-	
10	-	_	-	-	-	-	-	-	-	-	-	-	
11	-	-	-	_	-	-	-	-	-	-	_	_	
12 13	-	-	-		-	-	-	~	-	-	-	_	
13	5	-	6	-	-	-	-	-	-	-	_	-	
14	-	_	-	-	-	-	-	-	-	-	-		
15 16	-	_	-	_	-	-	-	-	-	-	_	-	
16	_	-	-	-	-	-	-	-	-	-	-	-	
17	-	-	-	_	_	-	-	-	-	-	-	-	
18 19	_	-	-	-	-	-	-	-	-	-	-	-	
19	10	-	7	-	-	-	-	-	-	_	-	-	
20	-	-	-	-	-	-	_	_	-	-	-	-	
21	-	-	_	_	-	-	-	-	-	-	-	-	
22	_	-	_	-	-	-	-	-	-	-	-	_	
23	-	-	-	-	-	-	-	-	-	-	-	-	
24	-	6	-	-	-	-	-	-	-	-	-	-	
25	4	-	16	-	-	-	_	-	-	-	-	-	
26	-	-	-	-	-		-	-	-	_	-	-	
27	_	~	-	-	-	-	-	-	_	-	-	-	
28	-	-	-	-	-	_	-	-	-	-	-	_	
29	-	-	-	-	-	-	-	-	-	_	-	_	
30	15	-	-	-	-	-	-	-	-	-	-	_	
31	15	-	18	-	-	-	-	-	_	-	-	-	
Max	15	27	18	0	0	0	0	0	0	0	0	0	
Avg	9	17	10	0	0	0	0	0	0	0	0	0	10
amples	4	2	6	0	0	0	0	0	0	0	0	0	12

### APPENDIX C

### METEOROLOGICAL DATA

Brohm Mining Corporation Deadwood, South Dakota

Hourly Wind Speed Data Hourly Wind Direction Data Hourly Wind Sigma Data Hourly Temperature Data Monthly Wind Summary Table Monthly Wind Rose Diagram

#### \*\*\* WIND SPEED SUMMARY \*\*\*

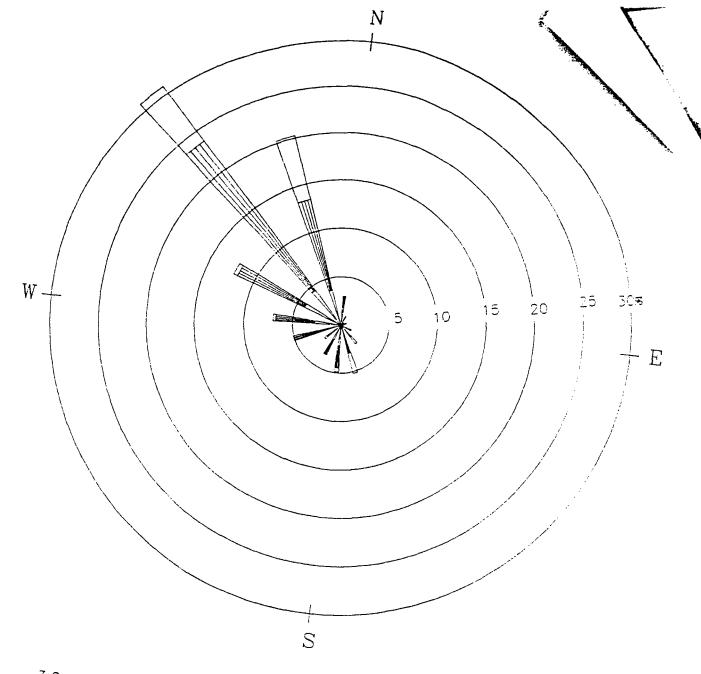
HOURS

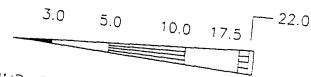
9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 В 1 4.1 4.2 5.7 5.0 4.8 4.5 6.2 6.5 5.6 4.9 2.3 3.4 2.9 3.4 3.0 3.5 3.5 4.3 6.2 7.7 10.0 12.0 11.9 11.2 5.7 2 11.8 10.4 10.2 9.8 8.6 8.1 9.9 9.3 11.2 9.8 9.0 8.7 9.6 8.1 8.3 7.2 7.1 5.5 5.7 5.3 4.5 5.2 5.7 8.6 8.2 3 8.3 8.1 7.4 8.8 9.2 9.4 10.4 11.5 13.1 12.0 9.4 6.8 5.2 4.3 2.0 3.7 9.8 13.5 12.2 10.1 9.6 10.7 11.1 14.0 9.2 4 14.9 14.0 13.6 11.5 12.1 12.9 11.4 10.7 12.0 9.8 7.9 6.9 8.7 5.6 4.3 6.0 6.3 6.1 6.1 6.8 7.9 7.3 8.0 8.6 9.1 5 7.4 7.9 9.0 6.9 6.6 6.1 5.2 3.8 3.6 4.2 4.2 7.5 5.9 5.2 7.6 6.6 7.8 7.2 4.0 3.0 6.4 9.3 11.1 9.2 6.5 6 7.8 6.2 8.0 8.7 7.4 7.4 5.8 5.4 5.1 1.9 2.5 1.4 4.0 4.8 3.4 3.3 2.2 2.1 3.1 4.5 4.0 3.5 3.1 3.3 4.5 7 3.3 3.6 3.3 3.4 4.6 5.8 6.8 7.0 8.1 9.0 9.6 8.0 7.5 6.5 6.1 6.7 7.4 6.1 5.0 3.9 3.2 1.8 0.8 0.5 5.3 9 8.6 9.8 10.7 10.9 12.6 13.3 13.8 13.3 12.9 10.9 8.7 8.3 11.5 10.0 11.1 10.4 9.6 10.6 10.9 11.1 11.0 10.5 10.5 9.6 10.9 10 8.1 8.2 10.3 12.1 11.3 11.7 10.1 8.0 9.2 7.8 6.9 7.8 7.5 6.9 4.9 4.4 3.9 5.3 6.2 6.6 6.7 4.3 4.9 4.3 7.4 11 5.0 7.0 5.7 5.9 7.1 7.0 5.8 8.4 6.5 8.2 8.8 8.4 9.4 7.8 7.4 7.6 7.0 7.0 8.1 9.0 8.6 8.5 8.6 9.2 7.6 12 10.0 9.8 12.0 12.7 13.3 13.4 10.8 9.6 9.0 7.5 6.3 6.6 7.7 8.9 6.8 6.3 7.0 6.0 6.4 6.0 6.7 6.9 6.1 4.9 8.3 13 5.0 4.3 4.0 3.8 4.0 3.6 3.1 3.0 2.5 2.2 3.7 1.8 0.7 4.8 4.3 4.5 4.8 4.6 4.4 4.5 5.4 5.6 5.5 5.9 4.0 14 6.5 7.1 8.1 7.7 9.0 8.4 8.3 8.7 11.1 11.1 11.0 12.3 12.4 18.0 18.5 15.6 14.3 10.3 12.1 12.1 11.5 11.3 10.6 10.4 11.1 15 11.1 10.8 10.9 11.1 13.0 12.5 12.8 12.0 10.4 8.0 8.9 8.7 9.7 7.9 8.5 9.9 12.3 12.9 15.3 16.2 15.9 15.1 15.2 14.1 11.8 16 15.4 15.2 15.0 15.4 16.4 16.3 14.0 14.3 15.1 14.4 14.7 15.3 13.9 13.0 13.7 15.3 14.9 14.7 14.7 15.5 14.9 15.8 13.7 15.3 14.9 17 13.6 15.2 13.0 11.8 11.5 12.1 10.3 8.7 8.5 7.0 6.6 7.1 5.4 4.5 3.7 4.0 3.7 4.0 7.0 9.5 9.0 8.8 8.1 8.4 8.4 18 7.9 9.2 9.8 9.9 9.7 10.9 9.6 10.7 9.8 9.5 10.4 10.1 9.6 9.3 11.9 10.9 11.9 10.9 11.2 11.0 10.8 12.4 13.2 14.6 10.6 19 13.3 14.0 12.7 12.8 13.0 13.2 12.8 12.2 12.6 12.5 12.7 11.1 11.5 10.3 11.4 11.8 11.7 12.0 12.9 12.0 11.4 11.3 10.8 10.4 12.1 20 10.3 9.2 10.5 8.1 6.4 6.5 8.5 6.5 6.8 6.4 6.5 4.3 5.3 4.7 4.5 4.0 3.9 2.6 2.4 0.5 0.6 3.5 4.6 5.4 5.5 21 6.2 5.0 5.0 5.4 4.3 3.5 3.4 3.8 1.2 1.4 3.0 4.2 5.4 5.1 5.0 5.8 5.3 3.2 3.7 5.4 6.8 6.9 8.6 10.6 4.9 22 11.4 12.9 13.9 14.2 15.7 15.3 16.1 16.9 12.9 15.1 14.7 13.8 13.8 15.3 15.6 17.4 15.6 13.4 15.2 13.9 14.2 12.6 10.2 9.4 14.1 23 8,2 9,1 10.4 8.5 9.7 10.3 10.4 10.6 9.5 10.2 9.0 9.1 10.2 10.6 9.5 6.9 6.7 6.4 5.7 8.9 7.5 7.2 7.4 6.9 8.7 24 7.1 9.3 8.8 8.7 9.8 9.8 10.5 13.6 12.0 12.5 15.4 17.1 15.9 17.0 15.1 17.0 14.5 13.8 14.5 13.0 16.9 16.5 15.3 12.3 13.2 25 10.1 8.9 7.8 6.9 6.9 6.2 5.5 5.9 7.3 4.2 3.3 4.2 4.4 7.1 7.0 7.3 8.7 8.6 9.5 9.1 7.8 7.2 6.9 7.3 7.0 26 8,7 8,5 9.0 9.0 10,6 10.2 11.8 11.7 11.2 11.6 11.1 11.1 9.4 11.4 12.5 10.8 10.0 7.9 5.1 5.4 5.2 5.7 6.4 6.4 9.2 27 6.4 5.9 3.9 3.1 2.9 3.2 3.4 5.5 7.1 7.3 5.4 5.7 4.3 6.7 4.9 4.0 4.0 3.6 4.4 6.1 6.8 6.5 8.1 7.4 5.3 28 7.2 7.4 7.4 6.3 8.0 6.2 7.0 6.3 5.6 3.6 1.8 3.6 3.3 2.5 3.3 3.7 1.8 2.9 5.1 6.1 5.0 3.9 6.0 7.9 5.1 29 7.0 8.9 9.7 11.1 10.3 9.5 9.7 11.7 11.6 10.3 9.6 11.0 8.7 10.9 9.0 6.7 4.9 3.2 3.7 4.0 4.6 5.8 5.6 6.7 8.1 30 9.2 9.4 9.4 10.4 10.3 9.7 9.2 10.1 9.4 8.8 7.8 7.8 8.1 7.2 6.6 6.7 6.8 6.0 6.5 6.7 6.4 5.5 6.5 6.8 8.0 31 6.8 7 0 6.9 7.4 7.4 6.6 7.9 8.0 7.0 5.4 5.3 5.7 7.3 6.1 6.3 7.0 6.7 6.3 6.4 6.8 6.3 6.8 6.0 5.5 6.6

AVG 8.4 8.6 8.8 8.6 8.9 8.8 8.7 8.8 8.7 8.0 7.6 7.7 7.7 7.9 7.6 7.6 7.6 7.1 7.6 8.0 8.2 8.3 8.3 8.5

				ر با د	916	214	JLC	314	ასც	30/	310	316	325	326	329	341	353	349	337	333	330	328	322	317
15	318	317	317	315	310	309	309	310	306	314	311	305	312	299	306	296	301	302	300	304	307	307	307	308
16	310	311	314	316	316	317	317	316	317	317	318	316	318	333	329	328	326	326	328	326	320	320	321	323
17	327	321	318	318	314	317	318	313	308	306	308	309	339	335	338	350	337	333	314	314	319	320	319	321
18	317	312	311	316	317	317	316	316	318	318	318	320	319	319	316	313	304	302	296	292	290	296	301	300
19	292	297	295	295	298	300	301	300	300	302	306	309	306	312	313	316	312	310	309	310	308	307	305	304
20	312	318	310	303	287	296	308	284	281	274	283	266	286	328	357	39	37	350	1	297	224	278	294	317
21	309	317	313	318	325	341	341	7	67	176	297	326	316	328	350	351	346	339	322	314	318	314	319	326
22	332	329	322	318	316	314	314	316	318	314	317	317	319	320	321	324	325	325	323	323	325	324	320	319
23	317	316	313	313	313	306	314	316	317	321	324	319	322	321	327	318	308	308	305	311	317	313	306	297
24	290	299	294	290	285	285	298	108	297	287	300	301	303	314	314	313	317	318	317	321	323	330	334	327
25	329	323	319	324	309	304	291	291	294	285	269	257	184	255	247	254	252	238	255	267	275	276	276	285
26	305	317	317	318	321	319	317	316	317	316	314	313	321	316	314	314	319	317	316	312	320	318	304	303
27	300	301	291	276	220	228	230	237	235	229	223	201	204	161	185	9	344	320	250	255	265	260	25B	269
28	275	275	286	289	295	293	297	297	303	292	279	316	345	332	<b>29</b> 2	310	289	252	289	294	294	289	308	317
29	320	322	320	320	321	317	313	316	315	316	317	317	325	325	327	322	310	266	250	254	256	273	285	297
30	314	317	318	319	320	320	318	320	319	318	323	320	322	330	313	318	314	302	290	296	292	2/6	275	276
31	278	281	278	296	296	295	299	301	293	290	296	292	293	273	263	272	280	272	271	271	278	283	288	288

RESULTANT WINDSPEED= 6.9 (MPH) RESULTANT WIND DIRECTION=307.9 DEG. WIND PERSISTENCE= 84.2%





WIND SPEED CLASS BOUNDARIES (MILES/HOUR) NOTES:

DIAGRAM OF THE FREQUENCY OF OCCURRENCE FOR EACH WIND DIRECTION. WIND DIRECTION IS THE DIRECTION FROM WHICH THE WIND IS BLOWING. EXAMPLE - WIND IS BLOWING FROM THE NORTH 3.0 PERCENT OF THE TIME.

# WINDROSE

GILT EDGE MINE

PERIOD: FEB. 1992

SEASON: WINTER

### \*\*\* HOURLY ATMOSPHERIC STABILITY \*\*\*

### HOURS

FEBRUARY 1992

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	В	В	С	С	С	С	С	С	С	С	С	В	С	Α	Α	Α	A	Α	Α	С	С	С	С	С
2	С	С	С	С	Α	Α	С	D	D	D	C	С	С	С	С	В	С	С	С	С	C	С	С	С
3	С	С	С	С	С	С	С	C	С	С	С	C	В	В	В	В	В	В	В	В	С	С	D	С
4	D	D	D	D	O	Α	Ε	D	C	С	В	В	Α	Α	Α	Α	Α	Α	В	В	В	В	В	В
5	В	В	В	В	В	В	С	D	D	D	С	В	В	С	В	C	В	8	С	С	С	С	С	С
6	C	С	С	C	С	C	C	С	С	С	В	Α	3	В	В	В	В	С	D	D	D	С	8	В
7	С	С	0	D	D	D	D	D	D	C	В	8	В	Α	В	Α	D	D	D	D	D	D	D	D
8	D	Đ	С	С	В	В	Α	В	Α	D	D	Α	Α	В	Α	С	В	Α	Α	С	D	D	D	D
9	D	D	D	С	В	В	С	В	В	8	Α	С	С	С	В	В	С	С	C	£	С	С	С	D
10	D	D	С	С	С	В	Α	В	В	В	D	С	Α	Α	С	D	D	8	D	D	D	D	D	D
11	D	D	D	D	D	E	E	E	£	E	D	D	D	A	С	Α	В	Α	D	C	С	0	0	Α
12	Α	Α	8	Α	В	D	D	D	D	С	В	В	В	8	Α	В	В	С	С	С	С	С	С	Α
13	В	В	В	В	В	8	Α	Α	Α	Α	8	Α	Α	Α	В	В	D	D	D	D	С	D	С	С
14	С	C	В	Α	В	D	C	C	С	С	С	С	С	С	С	С	С	C	С	С	С	C	С	D
15	D	D	D	C	С	С	С	C	D	С	В	Α	Α	Α	Α	A	С	С	D	0	С	ε	В	В
16	C	В	В	В	Α	Α	В	В	В	В	Α	Α	Α	Α	В	Α	Α	С	D	D	D	D	D	0
17	0	0	0	D	С	С	D	С	C	С	В	С	В	С	С	8	В	В	С	С	C	С	В	С
18	C	С	C	В	С	С	C	8	С	С	С	В	В	В	В	В	8	С	С	D	С	С	С	D
19	В	В	В	С	В	C	С	В	θ	8	В	Α	В	Α	Α	В	В	В	Α	Α	В	В	В	Α
20	В	В	В	С	В	в	C	С	С	Α	Α	В	В	С	С	В	С	D	D	С	С	Α	Α	Α
21	В	В	8	В	В	С	С	D	С	С	8	В	8	В	В	A	В	В	Α	Α	C	С	С	C
22	С	В	В	В	C	C	С	С	С	С	8	Α	Α	Α	Α	Α	Α	В	Α	Α	Α	8	С	С
23	C	Α	Α	В	В	С	C	С	С	В	С	С	С	В	С	С	В	C	С	В	В	В	С	C
24	C	С	С	Α	Α	Α	В	Α	В	C	С	В	В	В	В	В	С	С	С	С	С	С	С	С
25	С	С	В	С	С	С	С	С	C	С	В	В	В	В	В	В	8	С	C	C	С	С	С	С
26	C	С	C	C	8	В	В	В	C	В	C	В	В	В	В	С	В	В	В	C	В	С	В	В
27	С	С	В	В	В	C	В	С	С	В	В	В	В	В	В	В	В	С	C	C	С	C	С	С
28	C	С	C	С	С	С	C	В	В	В	В	В	В	В	В	В	В	С	C	С	D	С	D	D
29	D	D	С	В	В	В	В	С	С	В	A	A	Α	Α	Α	Α	В	В	В	С	D	D	С	В
30	-	-	-	-	~	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_		_	_		_	_	_	_

### DEADWOOD SD

FEBRUARY 1992

\*\*\* HOURLY SIGMA THETA WIND DIRECTION (DEG) \*\*\*

											но	JRS												,	NVG
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	22	19	17	16	16	16	17	14	17	15	18	21	17	27	26	26	33	55	24	14	17	15	14	14	20
2	14	14	17	18	37	24	16	13	12	13	16	18	17	18	18	19	17	18	17	17	17	18	17	17	18
3	17	17	17	17	17	17	17	16	16	17	18	18	21	22	20	20	20	20	20	19	17	14	12	15	18
4	13	12	12	11	11	34	8	13	14	18	21	19	26	72	32	25	30	32	20	21	22	22	22	22	22
5	21	21	19	20	20	19	16	12	10	11	17	21	21	18	19	18	19	19	17	17	16	17	18	17	18
6	17	14	14	15	15	16	16	16	16	17	20	26	23	22	21	21	20	18	12	9	12	16	20	19	17
7	14	15	12	13	13	12	13	10	9	15	20	22	22	38	23	34	11	13	13	12	10	9	11	12	16
8	11	11	14	17	19	19	25	20	39	12	13	49	37	21	24	16	19	57	27	15	9	10	13	13	21
9	12	13	13	18	20	19	17	20	20	21	30	17	17	16	19	19	18	17	15	15	15	15	15	11	17
10	12	12	15	14	18	21	27	20	23	22	12	18	31	29	18	13	13	22	12	9	9	11	11	9	17
11	12	11	10	10	9	8	8	7	8	8	9	11	11	25	18	24	19	25	11	15	15	13	12	35	14
12	45	43	23	51	23	12	10	12	13	16	19	20	21	22	24	21	22	18	17	15	18	17	15	25	22
13	21	19	20	20	22	21	40	40	28	37	21	24	31	30	22	19	12	13	11	13	15	13	15	16	22
14	17	15	20	24	21	13	15	14	16	18	17	18	17	16	17	17	17	18	17	18	16	15	14	13	17
15	12	12	12	17	16	18	16	17	13	14	21	28	34	26	60	76	18	15	11	12	14	17	23	19	22
16	17	19	23	22	43	78	19	21	21	19	34	37	44	31	20	38	31	16	11	9	12	9	11	12	25
17	11	11	13	12	14	14	13	14	15	18	19	18	19	18	18	19	19	19	18	17	18	18	19	17	16
18	18	18	18	19	18	18	17	19	18	18	1.7	19	20	20	20	21	21	18	14	13	16	17	14	12	18
19	21	21	20	18	22	17	16	20	20	19	21	24	23	24	24	23	23	21	24	25	23	23	22	26	22
20	20	19	20	18	20	19	15	15	16	34	49	21	21	17	18	19	17	12	11	14	18	29	34	34	21
21	20	22	22	21	20	17	17	13	15	17	19	21	21	22	23	24	19	19	68	41	14	14	15	18	22
22	18	21	22	21	17	15	16	15	15	17	19	25	26	27	29	27	30	19	43	53	29	21	15	18	23
23	17	32	25	19	21	15	17	16	18	19	18	18	18	19	18	18	19	18	18	20	20	19	16	17	19
24	15	15	14	27	32	21	23	24	22	16	17	20	19	22	22	19	17	16	15	15	15	16	16	16	19
25	17	17	19	18	18	18	18	16	16	17	19	19	20	20	19	20	20	18	18	16	14	14	15	16	18
26	15	16	16	17	19	19	19	19	18	19	18	19	19	19	19	18	19	19	20	18	19	18	19	19	18
27	18	17	19	20	19	18	19	17	18	19	21	21	21	20	19	20	20	18	17	16	15	16	16	16	18
28	16	16	17	18	18	18	18	19	19	19	19	19	20	21	20	20	20	18	16	15	13	14	12	12	17
29	13	12	16	22	22	22	20	17	17	21	28	35	37	29	31	24	22	23	19	15	13	12	17	20	21
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	~	-	-	0
31	-	-	-	-	-	-	-	-	•	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
AVG	17	17	17	19	20	20	18	17	17	18	20	22	23	25	23	23	20	21	19	18	16	16	16	18	

\*\*\* TEMPERATURE SUMMARY (DEG F) \*\*\*

											ноц	JRS												A	VG
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	53	55	56	57	57	57	57	56	55	56	59	61	62	64	64	63	62	57	56	55	53	49	50	50	57
2	50	51	50	49	48	46	45	45	43	43	45	46	47	48	47	46	44	42	41	38	37	35	34	32	44
3	32	32	32	32	32	32	32	31	31	33	34	35	36	35	34	34	33	32	30	29	27	27	26	26	32
4	21	26	29	31	34	36	37	37	37	40	43	44	47	48	47	46	45	44	39	38	38	38	38	37	39
5	37	37	37	37	38	38	38	38	39	42	44	46	46	44	44	42	40	36	34	33	32	30	27	26	38
6	24	24	25	27	27	28	28	28	28	30	33	35	36	36	37	36	36	34	32	31	30	29	27	26	30
7	25	24	24	24	24	23	23	22	20	21	24	27	28	29	28	26	25	24	22	21	20	22	23	22	24
8	21	22	21	20	22	23	24	24	23	23	24	27	29	27	26	24	24	23	20	24	26	28	28	27	24
9	28	28	28	28	29	29	30	30	33	34	31	29	31	29	30	32	31	30	29	28	28	28	28	27	30
10	27	26	26	26	26	27	24	26	29	26	26	32	38	38	36	37	35	27	24	19	17	17	17	15	27
11	13	11	9	8	8	7	6	6	6	7	9	13	18	23	24	23	23	50	19	25	26	28	28	31	16
12	31	34	35	34	32	32	33	35	35	35	38	39	41	41	42	41	41	40	37	36	35	34	35	35	36
13	35	36	35	36	35	35	35	35	35	36	38	38	43	46	46	41	38	37	35	35	38	37	36	38	37
14	39	41	42	43	40	38	37	33	32	31	31	31	32	35	34	35	35	36	34	34	33	32	32	32	35
15	31	32	32	31	31	32	32	32	33	34	38	40	41	41	42	42	40	38	37	35	34	33	34	35	35
16	34	33	32	33	34	33	32	32	33	36	38	40	42	41	39	38	39	39	35	34	33	33	32	32	35
17	31	30	30	30	30	29	28	27	26	27	29	28	28	28	29	28	28	27	26	25	25	25	25	25	28
18	25	24	23	22	21	21	20	21	20	20	21	26	27	28	29	30	30	30	28	27	26	25	26	26	25
19	27	27	21	28	28	30	30	30	31	34	37	39	41	43	44	44	44	43	40	39	39	40	41	38	36
20	27	25	25	23	23	20	18	18	20	22	25	27	30	32	33	32	30	29	29	29	33	37	37	38	28
21	39	39	39	38	38	39	37	37	38	38	41	42	43	42	43	41	40	38	37	36	35	35	37	39	39
22	39	40	40	40	40	39	38	38	37	38	40	43	45	46	46	46	46	44	44	43	38	35	32	31	40
23	31	31	33	35	34	32	30	30	29	29	29	28	28	21	26	23	22	22	21	20	20	19	17	17	26
24	17	16	15	15	15	15	17	19	21	25	28	30	32	33	34	34	34	34	31	31	31	31	32	31	26
25	31	30	30	29	29	28	28	29	30	32	34	35	36	38	38	39	39	38	36	34	34	35	36	37	34
26	37	38	37	37	39	39	38	37	37	38	41	43	44	43	39	35	39	41	41	39	39	38	38	38	39
27	38	39	39	39	38	38	38	39	39	40	43	45	47	49	51	52	53	52	50	49	50	50	50	50	45
28	49	48	49	47	44	43	42	42	42	42	44	46	47	49	50	51	51	50	48	46	45	45	44	46	46
29 30	46	46	46	45	45	45	47	48	49	52	55	58	59	60	59	58	57	56	52	50	49	49	49	49	51
31	-	_	-	_	-	_	-	-	-	-	-	-	-	_	-	_		-	-	_	_	-	-	-	0
31	-	=	-	-	-	-	-	-	-	-	-	-	_	-	-	-	-	-	-	-	-	•	-	-	U
AVG	33	33	33	33	32	32	32	32	32	33	35	37	39	39	39	39	38	37	35	34	33	33	33	33	
	MINIM	UM T	= 6	М	AX I MUI	4 T =	64	AVI	ERAGE	T =	35	NUM	BER OF	HOU	RS OF	DATA	= 6:	96							

BROHM MINING CORP. DEADWOOD SD MARCH 1992

HOURS

### \*\*\* WIND SPEED SUMMARY \*\*\*

AVG

9 10 11 12 13 14 15 16 17 18 19 20 21 22 1 14.3 12.5 13.0 11.2 10.1 13.6 10.8 13.0 13.6 8.6 7.3 7.3 7.0 9.7 9.7 10.6 8.8 8.1 4.4 2.2 13.0 14.3 13.0 11.7 10.3 2 11.4 10.3 11.2 11.4 10.1 7.9 9.0 8.6 6.2 4.8 11.4 10.8 11.7 14.5 13.6 11.7 11.0 8.8 11.7 13.4 11.4 9.2 15.0 13.9 10.8 3 14.7 13.4 9.9 5.3 3.1 8.6 18.5 18.3 15.2 14.3 13.9 15.2 13.6 16.3 17.8 16.9 13.4 8.1 6.8 9.5 9.7 12.5 11.4 15.4 12.6 4 18.5 17.4 16.1 16.5 20.9 24.4 25.3 22.7 22.4 19.8 20.2 24.0 21.6 20.7 21.6 24.2 22.2 13.9 15.0 14.5 14.5 12.1 14.3 16.3 19.1 5 14.3 13.6 12.8 12.3 9.0 3.5 5.1 4.4 5.9 3.7 5.5 7.7 7.3 6.6 6.8 6.4 6.6 7.0 7.9 7.3 9.2 8.4 11.9 15.2 8.3 6 14.7 14.1 13.0 13.9 11.9 9.7 8.8 10.6 11.4 9.9 9.7 8.6 9.7 11.9 14.5 12.8 10.3 9.2 9.5 10.1 9.9 4.8 8.1 9.0 10.7 7 7.7 11.0 16.7 18.0 22.9 15.2 17.8 18.0 10.6 12.8 13.9 11.4 10.8 9.0 8.8 10.1 9.0 7.0 12.1 8.8 10.3 11.9 14.3 8.4 12.4 10 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 5.9 9.7 9.5 13.0 13.9 16.1 17.2 18.7 19.6 20.5 18.9 19.6 16.9 17.8 21.6 21.8 11.2 11 22.0 22.4 26.2 28.4 30.8 28.8 28.8 28.4 29.5 28.6 26.6 30.1 29.5 28.2 24.0 24.0 20.7 23.5 29.3 26.0 26.6 22.2 20.5 20.0 26.0 12 19.4 20.7 18.3 19.1 17.6 16.5 16.9 17.2 18.7 20.9 20.7 22.0 23.1 23.1 21.3 18.0 18.9 14.3 15.6 15.6 15.4 16.1 16.9 15.6 18.4 13 15.8 13.6 13.0 13.2 12.3 14.1 18.3 17.6 21.3 24.9 26.0 22.7 19.6 16.9 18.3 22.0 18.9 19.4 19.6 17.4 16.3 14.3 12.3 11.4 17.5 14 11.2 11.2 11.7 13.2 12.1 10.6 12.8 16.3 14.5 13.6 15.8 16.7 18.5 17.2 15.4 13.0 11.7 9.2 7.9 8.8 8.6 13.2 19.4 19.1 13.4 15 16.7 8.8 6.4 8.4 8.4 11.2 13.0 13.9 11.0 3.7 7.9 13.9 12.8 11.2 11.9 11.7 13.4 10.6 10.6 13.0 15.4 16.9 16.7 15.0 11.8 16 11.9 16.1 14.5 13.9 14.7 13.0 12.5 13.4 14.7 19.4 18.3 16.9 13.2 10.3 15.0 15.2 16.1 13.4 10.6 23.1 26.8 30.4 37.4 34.8 17.7 17 31.0 25.1 7.9 21.6 35.9 46.4 53.5 49.9 52.4 48.8 46.4 48.2 48.2 41.4 38.3 36.3 35.6 32.6 35.4 38.1 30.8 37.0 36.7 32.8 37.9 18 21.3 9.0 3.5 4.0 8.4 7.9 5.9 3.5 7.0 7.5 10.8 12.5 16.1 15.6 15.0 14.3 11.7 8.6 5.7 1.3 1.3 2.2 2.9 6.2 8.4 19 6.8 7.3 6.8 7.9 8.6 8.6 6.2 7.3 8.1 9.7 9.5 9.9 13.9 15.0 15.0 13.9 12.5 16.1 14.5 15.2 15.2 17.4 17.4 12.8 11.5 20 10.1 12.3 15.2 18.5 16.1 15.4 17.2 17.4 17.2 16.5 16.5 16.5 16.5 12.3 15.8 18.9 21.1 25.5 22.0 17.4 19.6 21.1 20.5 20.5 23.1 17.8 21 21 6 22 2 20 7 19 4 15 4 13 9 11 2 9 2 8 1 6 6 5 9 5 1 5 7 5 5 5 9 6 8 6 2 7 3 6 8 5 9 8 1 8 1 7 3 7 5 10 0 22 12.8 13.9 14.1 15.4 14.7 17.2 19.4 17.4 13.2 8.6 7.0 8.8 9.5 10.6 11.2 9.9 10.8 15.4 11.2 3.5 1.1 4.2 7.3 12.8 11.2 23 12.1 12.3 11.7 14.1 12.5 12.5 15.0 14.1 8.1 7.5 5.7 10.6 12.3 15.4 16.5 15.2 14.7 11.4 11.9 16.1 17.6 12.1 9.5 7.3 12.3 24 10.8 13.0 14.3 15.8 13.0 11.9 15.8 22.2 24.0 25.1 22.4 22.9 21.6 21.3 19.8 22.7 18.9 19.8 16.1 15.8 15.8 15.6 13.0 13.2 17.7 25 15.2 14.3 11.7 13.6 17.6 15.4 17.6 21.1 21.8 23.3 26.2 27.5 27.3 28.4 23.3 24.9 26.0 26.8 24.6 19.8 15.0 12.5 11.4 10.6 19.8 26 10.6 7.7 7.9 7.3 11.4 16.1 18.0 17.6 15.4 15.8 13.9 16.1 14.5 10.3 10.8 11.9 13.4 17.8 27.1 26.8 20.9 16.7 15.8 16.1 15.0 27 16.1 20.9 20.2 20.7 19.6 18.7 16.3 16.3 15.2 12.1 13.9 13.2 15.6 15.8 14.5 17.2 19.6 16.3 6.6 6.2 10.6 9.0 14.1 9.2 14.9 28 11.9 11.7 12.1 13.9 15.0 14.1 14.1 14.5 14.7 16.5 18.7 18.5 20.2 24.9 27.7 26.6 29.0 26.6 26.6 21.6 18.9 19.1 14.1 15.6 18.6 29 13.4 12.3 9.9 14.1 9.2 2.6 2.4 5.9 15.2 11.7 9.2 10.1 13.6 16.5 14.5 17.2 19.6 19.4 21.6 24.6 22.2 15.8 11.9 9.0 13.4 30 8.8 15.8 14.7 15.6 14.5 11.4 10.6 6.6 7.0 10.8 12.1 9.7 11.7 12.3 18.0 16.9 14.7 14.3 11.0 7.3 7.0 14.5 12.3 11.4 12.1 31 9.2 /.3 /.0 9.5 /.7 10.6 14.3 16.3 16.3 17.8 20.5 21.6 21.8 22.9 21.6 21.3 22.2 18.5 17.6 12.5 7.7 6.4 4.8 4.2 14.1

14 9 15.1 14.6 14.5 15.3 15.4 15.7 15.8 15.9 15.6 14.5 14.1 13.7 13.5 13.5 14.0 13.6

# \*\*\* WIND DIRECTION SUMMARY \*\*\*

# HOURS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	263	276	285	290	289	303	292	299	300	316	331	355	357	360	352	354	3	65	119	172	170	174	181	194
2	188	222	276	277	282	274	291	309	34	31	120	112	96	52	57	51	97	105	144	163	179	197	169	220
3	253	260	259	267	193	217	223	219	208	206	210	212	207	214	195	193	206	214	182	186	200	188	197	202
4	202	203	199	194	183	174	169	163	155	144	122	121	116	114	122	138	149	151	100	87	91	86	118	152
5	170	174	163	168	161	227	333	334	332	336	357	358	31	9	349	354	357	346	347	339	331	333	310	312
6	312	314	313	316	316	319	319	324	325	327	326	327	302	293	301	290	295	303	305	295	311	344	314	316
7	314	301	303	307	308	312	311	307	320	320	317	323	316	312	344	350	353	46	120	133	134	164	176	184
8	179	176	174	151	166	157	142	140	120	122	129	50	52	50	13	5	9	359	359	359	359	357	351	352
9	351	352	341	331	335	320	318	305	306	306	316	320	321	329	328	326	331	331	328	333	329	331	333	338
10	338	337	337	324	311	310	308	307	307	308	308	318	316	320	317	317	320	319	319	318	321	322	320	319
11	323	320	319	321	323	324	324	325	329	329	328	330	332	328	327	326	321	323	327	330	334	335	330	332
12	331	329	322	329	327	326	323	322	322	323	326	324	328	329	330	331	330	330	320	321	321	316	317	317
13	317	318	320	322	334	326	331	327	329	328	325	328	330	334	334	333	325	323	325	322	318	320	324	336
14	334	332	329	319	323	326	316	305	313	324	331	329	338	347	356	350	351	348	348	15	131	166	157	178
15	173	217	2/3	219	273	261	249	245	235	226	234	263	281	280	290	275	261	249	228	220	221	223	231	258
16	569	260	284	293	303	321	321	331	331	340	340	348	354	351	2	22	34	59	79	121	140	150	159	161
17	176	178	202	160	161	173	175	1/4	176	175	178	177	173	166	166	161	171	171	163	160	162	159	164	171
18	171	186	276	344	344	331	318	19	140	123	116	122	146	120	118	114	119	112	112	95	346	336	327	312
19	317	329	324	319	317	321	319	324	322	316	314	319	353	335	332	321	320	313	310	308	309	308	308	299
20	278	269	261	253	250	247	240	236	241	256	272	350	351	316	302	303	307	312	321	319	330	327	330	329
21	328	331	333	331	335	338	334	326	323	321	326	330	339	343	347	346	336	351	350	318	298	297	293	292
22	304	307	304	298	295	297	301	304	295	297	296	352	354	348	350	356	352	18	38	50	300	283	287	296
23 24	296	296 309	291	295	290	291	295	299 330	326	8	20	55	53	59	57	46	41	88	128	159	172	183	203	231 321
25	295 314	317	308 317	309 310	314 307	319 302	319 306	306	330 307	328 308	329 311	328 314	327 313	327	330 308	333	337 316	336 323	332 325	329 331	326 332	318 328	329 329	326
26	332	331	327	324	314	311	311	312	317	326	339	340	358	309	22	312 60	129	132	155	165	332 179	186	205	211
27	204	202	205	214	214	230	255	255	253	240	243	230	218	211	233	242	245	233	250	287	294	258	252	269
28	294	304	323	320	322	324	327	328	331	336	331	343	348	352	354	346	354	354	354	355	357	355	345	347
29	347	353	351	17	39	120	203	176	155	134	95	38	348 57	352	354 78	119	354 125	125	134	162	178	180	170	271
30	277	258	262	261	262	275	289	300	312	7	90 5	30 4	5/ 6	38	18	359	351	349	346	357	347	17	4	11
31	19		. 10	355	324	341	341		352	•	348	344	347	354	354	351	353	348	354	353	356	3	312	278

BROHM MINING CORP.

OEADWOOD SD

MARCH 1992

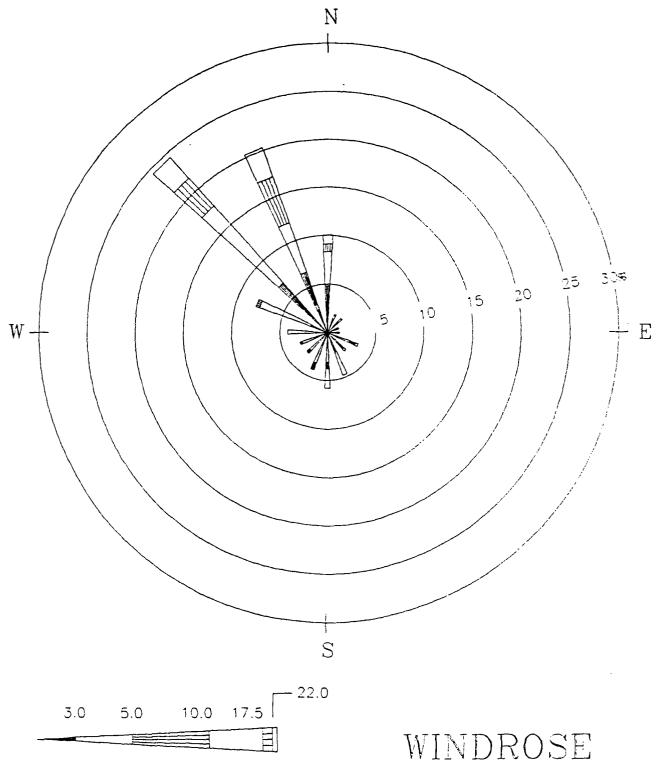
# \*\*\* WIND FREQUENCY SUMMARY \*\*\*

DIR	N	NNE	NE	ENE	£	ESE	SE	SSE	S	SSW	SW	WSW	W	MMM	NW	NNW	TOTAL
SPEED (MPH)																	
0.3 - 3.0	1.5	0.1	0.4	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.1	1.9	2.6	7.3
3.1 - 5.0	0.0	0.3	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.3	0.0	0.3	0.1	0.1	0.5	2.0
5.1 - 10.0	3.4	0.7	0.3	0.1	0.1	0.5	0.4	0.1	0.8	0.7	0.5	0.4	1.1	1.6	4.8	3.5	19.1
10.1 - 17.5	3.5	0.8	1.2	1.1	0.9	1.6	8.0	1.3	2.2	2.4	1.7	2.4	2.8	5.6	10.8	5.4	44.6
17.6 - 22.0	0.8	0.1	0.0	0.0	0.0	0.7	0.9	0.7	0.7	0.8	0.4	0.3	0.0	0.4	3.9	5.1	14.8
22.1 - 30.0	0.9	0.0	0.0	0.0	0.0	0.3	0.3	0.9	0.4	0.0	0.0	0.0	0.0	0.0	2.8	3.1	8.7
30.1 - 40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.5	0.0	0.0	0.0	0.0	0.0	0.1	0.1	2.3
40.1 ~ 50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
OVER 50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
TOTAL	10.1	2.0	2.0	1.2	1.2	3.4	2.6	4.7	5.8	4.2	3.0	3.1	4.2	7.9	24.5	20.3	
AVG.SPEED	11.2	10.0	9.3	13.1	11.2	14.1	15.2	24.3	22.5	14.2	12.7	14.5	11.2	11.9	14.2	14.2	

CALM HOURS= 0.0% TOTAL HOURS WITH BOTH SPEED AND DIRECTION= 744 AVERAGE WIND SPEED= 14.3 (MPH)

RESULTANT WINDSPEED= 5.3 (MPH) RESULTANT WIND DIRECTION=307.6 DEG.

WIND PERSISTENCE= 36.8%



WIND SPEED CLASS BOUNDARIES (MILES/HOUR)

# NOTES:

DIAGRAM OF THE FREQUENCY OF
OCCURRENCE FOR EACH WIND DIRECTION.
WIND DIRECTION IS THE DIRECTION
FROM WHICH THE WIND IS BLOWING.
EXAMPLE — WIND IS BLOWING FROM THE
NORTH 10.1 PERCENT OF THE TIME.

GILT EDGE MINE

PERIOD: MAR. 1992

SEASON: SPRING

MARCH 1992

# \*\*\* HOURLY ATMOSPHERIC STABILITY \*\*\*

HOURS

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	В	В	С	С	С	D	D	Đ	D	С	В	Α	Α	Α	Α	В	Α	В	Α	Ε	E	D	D	С
2	С	В	8	В	В	В	D	С	A	A	D	В	A	В	В	Ā	Α	C	C	Đ	D	C	8	C
3	В	В	С	В	Α	В	С	С	С	8	Α	Α	A	Α	В	Α	В	В	D	D	C	С	C	С
4	C	C	С	С	C	D	Ε	Ε	E	Ε	D	С	С	С	С	8	С	Α	С	8	A	A	D	С
5	0	O	Ε	Ε	D	Α	В	В	С	Α	В	8	Α	Α	В	В	Α	В	В	В	С	С	С	D
6	D	0	С	С	C	C	C	C	C	C	C	Α	Α	Α	8	В	В	В	В	В	В	В	С	С
7	С	В	С	С	С	C	C	С	8	A	В	В	Α	Α	Α	В	В	Α	С	D	С	D	E	С
8	С	D	D	D	D	D	D	O	0	D	С	C	F	Ε	С	С	С	C	C	C	С	C	С	C
9	С	С	В	С	С	C	С	D	0	0	С	В	C	F	Ε	Ε	D	Ε	D	С	С	С	D	F
10	F	F	F	D	E	F	Ε	F	F	F	F	С	В	В	В	С	С	С	С	С	С	C	C	С
11	В	С	С	С	С	В	C	С	C	С	В	В	В	В	В	В	В	С	C	C	С	C	В	С
12	C	В	В	С	С	С	С	С	С	C	8	С	В	В	С	В	В	C	С	C	C	С	С	C
13	С	С	C	C	C	C	В	В	В	В	В	В	В	В	В	В	В	С	C	С	С	С	C	С
14	С	D	С	C	C	С	C	0	С	8	В	В	В	В	В	Α	В	С	С	₿	Α	D	E	D
15	D	Α	В	В	В	В	C	С	С	В	Α	Α	Α	Α	Α	Α	Α	B	С	C	С	С	С	В
16	В	В	В	0	С	С	C	D	C	С	В	В	В	Α	Α	Α	В	ß	В	В	D	0	Ε	0
17	D	D	Α	D	D	D	0	0	D	D	D	D	D	С	С	С	С	C	D	E	Ε	D	D	Đ
18	D	A	A	C	C	C	C	Ą	В	С	£	D	С	D	D	Ε	Ε	Ε	D	С	В	С	D	D
19	D	D	D	D	D	C	C	С	С	С	В	Α	В	В	В	В	В	В	С	С	C	С	С	С
20	В	В	В	В	В	В	C	С	В	В	Α	A	В	В	Α	В	В	8	В	С	С	В	В	В
21	C	С	В	В	В	В	В	В	В	В	В	В	A	A	8	В	В	В	В	Α	D	D	D	D
22	ō	D	D	D	D	D	D	C	В	A	Α	A	Α	В	A	A	В	В	В	A	A	C	C	E
23	E	0	С	0	C	С	D	D	В	A	A	A	A	Α	A	A	В	Α	C	E	E	D	В	В
24	D	D	0	0	C	C	C	C	C	В	С	C	C	В	В	В	В	В	С	C	С	C	С	C
25	С	C	C	С	C	C	C	C	C	В	В	В	В	В	В	В	В	В	C	В	В	В	C	C
26	С	С	C	С	0	D	C	C	C	В	8	A	A	A	A	Α	A	8	C	D	D	C	С	C
27	C	C	С	С	С	В	В	В	В	В	Α	Α	Α	Λ	Α	Α	Α	В	Α	Α	В	В	В	В
28	0	D	D	D	C	С	С	C	C	В	В	В	Α	В	В	В	В	В	В	В	8	В	C	8
29	В	8	C	C	C	A	С	C	D	A	A	A	A	A	A	C	В	В	C	D	0	C	В	8
30	8	В	В	8	В	В	С	A	A	C	В	A	Α	A	A	В	В	В	В	С	C	D	C	0
31	C	С	С	С	С	В	С	С	В	В	В	Α	Α	В	В	В	В	8	В	С	С	С	Α	С

\*\*\* HOURLY SIGMA THETA WIND DIRECTION (DEG) \*\*\*

AVG HOURS DAY 3 

**MARCH 1992** 

# PRECIPITATION TOTALS - 1992

# BROHM MINING CORPORATION

(Values in inches of water)

Date Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov

1 0.00 0.00 0.00

2 0.00 0.00 0.00

3 0.00 0.00 0.00

4 0.00 0.00 0.00

5 0.00 0.00 0.00

6 0.00 0.00 0.00

7 0.02 0.00 0.00

8 0.00 0.00 0.00

9 0.00 0.00 0.00

10 0.00 0.00 0.00

11 0.00 0.00 0.00

12 0.00 0.00 0.00

13 0.01 0.00 0.00

14 0.00 0.10 0.00

15 0.00 0.00 0.00

16 0.00 0.00 0.00

17 0.00 0.00 0.03

18 0.00 0.02 0.03

19 0.00 0.00 0.00

20 0.00 0.00 0.00

21 0.00 0.00 0.00

22 0.00 0.01 0.00

23 0.00 0.00 0.00

24 0.02 0.00 0.00

25 0.00 0.00 0.00

26 0.00 0.00 0.00

27 0.00 0.00 0.00

28 0.00 0.00 0.00

29 0.00 0.00 0.00

30 0.00 0.00

31 0.00 0.00

Tot. 0.05 0.13 0.06

Max. 0.02 0.10 0.03



DATE:

JULY 27, 1992

TO:

DAVID LAYMAN

FROM:

JIM BARRON

SUBJECT: FINANCIAL ASSURANCE COVERAGE

Attached are responses to questions posed in the Plant Insurance Company questionnaire. If you need any more information please let me know. Hopefully this will result in a site visit by a Planet representative soon so that the coverage can be finalized by September 1, 1992.



July 28, 1992

Jim Price Marsh & McLennan One United Bank Center 1700 Lincoln Street, Suite 4900 Denver, CO 80203-4549

Dear Jim:

Re: Financial Assurance Coverage

Enclosed you will find one (1) completed application to Planet Insurance in respect of obtaining financial assurance insurance for the Gilt Edge Mine located in South Dakota.

Should you have any questions, do not hesitate to call.

Yours very truly,

MinVen Gold Corporation

David J. Layman

Vice-President, Administration,

Controller and Secretary

DJL:sg

#### PLANET INSURANCE COMPANY

- 1.) Brohm Mining Corporation
  - a. DNA
  - b. P.O. Box 485, Deadwood, SD 57732
  - c. Gilt Edge Mine
- 2.) Partnership
- 3.) Five years
- 4.) Sales:
  - a. 24,000 Ounces of Gold
  - b. 1991, 1990, 1989, 1988, 1987 30,302 oz. 33,133 oz. 17,160 oz. 6,660 oz. 0
- 5.) a. Open pit heap leach gold and silver mine. Start up in 1987. Gold and silver recovery by Merrill-Crowe system. Historic underground mining and associated milling occurred from late 1800's to late 1930's.
  - b. Ore/waste rock is produced from mine by surface mining method. Waste rock is delivered to modified valley-fill repository. Ore is crushed to -1" size and carried to triple-lined (clay, fml, fml) leach pad. A diluted cyanide solution is applied to ore. Dilute cyanide solution is piped to plant where gold/silver is recovered.
  - c. No lawsuits have been filed against Brohm Mining Corporation, however the technical information project of Rapid City, SD is threatening legal action if Brohm Mining Corporation does not obtain a traditional NPDES permit from the EPA. Brohm and its legal counsel have been in contact with EPA, and it appears the lawsuit may not come to pass.
  - d. See attached Organizational chart.
  - e. Employees trained in accordance with 30CFR part 48. Additional training on an "as-needed" basis conducted. Separate and unique one time training by vendors (DuPont, DeGussa, etc).

- f. Company official is member of the County LEPC which has recently updated its emergency planning in accordance with "Sarah Title III". Company reports regularly to the County Planning and Zoning administration. Company officials work closely with South Dakota DENR on nearly a daily basis. Other than MSHA, company dealings with Federal agencies is on a sporadic basis.
- 6.) a. See attached site plan. Attachment III.
  - b. See attached site plan. Attachment III.
  - c. No
  - d. See Attachment III.
  - e. No domestic or commercial uses within 1 mile of property boundaries,
  - f. No.
  - g. Facility is accessed via private access road through main gate located at Administration building operated by remote controllers. Access to property is through ancillary routes controlled by fences/locked gates. Ancillary access is primarily by abandoned logging trails. Facility product is under constant video, IR and motion detector type electronic surveillance. Security system is monitored at a remote central monitoring location.
  - h. Employee training is in compliance with 30CFR part 48, additional training on "as-needed" basis supplied in-house or by applicable vendors i.e. DuPont, DeGussa, etc. An employee safety incentive program is in place.
  - i. Portable fire extinguishers are located throughout facility as per regulatory requirements. Plant has dedicated firefighting system (standardized hoses, fittings, and piping compatible with local fire department(s)). Also is place are dedicated fire suppression pumps, back upelectrical system and 60,000 gallon water storage, in accordance with local zoning ordinances and NFPA recommendations.
  - j. A spill contingency plan is in place, updated yearly, facility personnel involved in LEPC. South Dakota Mining Association sponsors a Technical Advisory Committee. Several employees have EMT status.

#### 7.) a. N/A

b. N/A

- d. No
- e. N/A
- f. No
- g. Storm water discharge points only. See attached site plan. Attachment IV.
- h. N/A
- i. No
- 8.) a. Yes
  - 1. See Attachment I. Types of materials

Hydrogen Peroxide	Lead Nitrate	Zinc
Descalent	Caustic Soda	Sulfuric Acid
Sodium Cyanide	Borax	Sodium Nitrate
Fluorospar	Diatamaceous Earth	Soda Ash
Carbon Dioxide	L.P. Gas	Lime
ANFO		

- 2. Normal operational quantities.
- 3. See Attachment I.
- 4. No permitted limits.
- b. See Attachment I.

Tank No.	<u>Material</u>	Capacity	<u>Age</u>	A/G	or U/G	<u>Diked</u>
	Hydrogen	8,000 gal				
1 & 2	Peroxide	10,000 gal	3 yr	s A/0	3	No
	Liquid					
3 & 4	Propane	10-12,000	gal	5 yrs	A/G	No
	Diesel	10,000 ga	ıl	unknown	A/G	Yes
	Gasoline	1,000 ga	}	unknowr	n A/G	Yes
	Carbon					
	Dioxide	8,000 gal		unknown	A/G	No

- c. No
- d. Yes. See Attachment V.
- 9.) a. No
  - b. NO
- 10.) a. See Attachments VI & VII.

COMPLETION OF THIS FORM DOES NOT BIND COVERAGE, APPLICANT'S ACCEPTANCE OF COMPANY'S QUOTATION IS REQUIRED PHIOR TO BINDING CHRRACE AND POLICY RESULTS. IT IS AGRED THAT THIS FORM SHALL BE THE SASES OF THE CONTRACT SHOULD A FOLICY BE ISSUED, AND IT WILL BE ATTACHED TO THE POLICY.

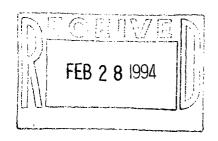
Applicanti	**************************************	شکارمند با دانده میشد می مست سی کارش میشد به ایال میش سازند میشود می وارد و میشوران و واروشا
By I	(Title)	Datie :
Agent/Broker:		مرابع المرابع
Address;	·	indicate a strang (1900). Di formación de las paras como acomo de deligora de despública de la como de la como

If an order is received, the application is attached to the policy to it is necessary that all questions be entered in full.

11.) a. No. Settled without going to court.

- b. No
- c. No





February 23, 1994

Michael Cabirac Consulting Services Inc. 415 Eagleview Blvd. Suite 115 PO Box 640 Exton, PA 19341-0640

Dear Mr. Cabirac:

Per your request for additional Brohm Mining Corporation information for your environmental risk assessment survey (Planet Insurance Co. - Pollution Clean-up Coverage), I have enclosed the documents requested by CSI. Should you require additional information, please let me know.

Sincerely,

DAKOTA MINING, CORP.

Dale A. Shay

Director of Environmental Affairs

DS:sm

Enc.

cc: Rod J. MacLeod (w/o enc.)

J.C. Sowers (w/o enc.)

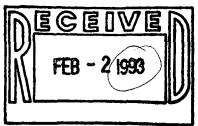
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10

Marsh & McLennan, Incorporated One Norwest Center 1700 Lincoln Street, Suite 4900 Denver, Colorado 80203-4549 Telephone 303 861 7111

FAX 303 861 8123

February 1, 1993



Marsh & MCLENNAN

Mr. Martin Quick
MINVEN GOLD CORPORATION
410 Seventeenth Street, Suite 2450
Denver, Colorado 80202

RE:

POLLUTION LEGAL LIABILITY POLICY NO.: NTA2509593

#### Dear Martin:

Enclosed is the original policy for the new Pollution Legal Liability coverage which was effective January 18, 1993. In addition, I have enclosed a copy of the letter from Brian Lynch which clarifies the issues that Roxanne Giedd had questions regarding.

Please review the enclosed and let me know if you have any questions.

Sincerely,

'Jennifer Hill Client Manager

JH/ci

**Enclosure** 

# **PLANET INSURANCE COMPANY**

MADISON, WISCONSIN

NAMED

INSURED

MINVEN GOLD CORP./BROHM MINING CORP.

AND

P.O. Box 485

POST OFFICE Deadwood, SD 57732

#### **POLLUTION LEGAL LIABILITY**

#### **DECLARATIONS**

# THIS IS A CLAIMS-MADE POLICY—PLEASE READ CAREFULLY

POLICY NUMBER:	NTA2509593	
Item 1: NAMED INSURED	MINVEN GOLD CORP./BROHM MINING CORP.	
ADDRESS	P.O. Box 485	<u> </u>
	Deadwood, SD 57732	
ltem 2: POLICY PERIOD		
	January 18, 1993 TO January 18, at the address of the NAMED INSURED shown above.	1994
item 3: LIMIT OF LIABILITY, up to	\$286,000	each LOSS
	\$ 286,000	Total for all LOSSES
Item 4: RETENTION \$	50,000 each LOSS	
Item 5: COVERED LOCATION(S)_	Gilt Edge Mine	
-	Deadwood, SD	
-		
Item 6: POLICY PREMIUM \$	10,000	
Item 7: EXTENDED DISCOVERY	CLAUSE DATE January 18, 1993	
Broker: Marsh & McLennan, 1700 Lincoln Stre Denver, CO 80203	et, Suite 4900	

Authorized Representative

Baul Mudill

BL/sm 1/18/93

#### ENDORSEMENT #1

This endorsement, effective 12:01 a.m., January 18, 1993 forms a part of Policy No. NTA2509593 issued to MINVEN GOLD CORP./BROHM MINING CORP. by Planet Insurance Company.

It is hereby agreed upon that this policy does not apply to LOSS arising out of the following:

- 1) Radioactive Matter Exclusion: the actual, alleged or threatened exposure of person(s) or property to any radioactive matter except where specifically endorsed onto the policy.
- Non-Owned Disposal Site Exclusion: from waste or materials transported via automobile, aircraft, watercraft or rolling stock beyond the boundaries of the covered locations identified in the Declarations.
- 3) Underground Tank and Underground Piping Exclusion: the presence or use of any underground tank or underground piping to or at the covered locations identified in the Declarations.
- 4) Absolute Asbestos Exclusion: the actual, alleged or threatened exposure to person(s) or property to any asbestos matter.
- 5) Superfund Exclusion: locations designated as being either proposed for or on the National Priorities List or on any state "Superfund" list unless specifically scheduled onto the policy by endorsement.

All other terms and conditions remain the same.

(Authorized Representative)

Baul Mudill

PLL-3 (9/87)

#### ENDORSEMENT #2

This endorsement, effective 12:01 a.m., January 18, 1993 forms a part of Policy No. NTA2509593 issued to MINVEN GOLD CORP./BROHM MINING CORP. by Planet Insurance Company.

It is hereby agreed upon that the following entity will be included as an Additional Insured, but solely as respects liability arising out of Minven Gold Corp./Brohm Mining Corp.'s ownership, operation, maintenance or use of the location covered under this policy.

#### ADDITIONAL INSURED

State of South Dakota

All other terms and conditions remain the same.

(Authorized Representative)

# PLANET INSURANCE COMPANY MADISON, WISCONSIN

APPLICATION FOR POLLUTION LEGAL LIABILITY INSURANCE (Include 10K report, annual report, and flow chart of process if available.)

# THIS IS AN APPLICATION FOR A CLAIMS MADE POLICY

TELEPHONE: (	TION NUMBER(S): DNA  DDRESS: P. O. Box 485, Deadwood, S.D. 57732  605
TELEPHONE: (	D IS:  Corporation Joint Venture Other
NAMED INSURE  X Partnership  HOW LONG HAS	D IS:  CorporationJoint Venture Other
NAMED INSURE  X Partnership  HOW LONG HAS	D IS:  CorporationJoint Venture Other
X Partnership HOW LONG HAS	CorporationJoint VentureOther
	THE NAMED INSURED BEEN IN BUSINESS? Five Years
SALES:	
A) ESTIMATED (	Ensuing Year): 27,000 Ounces of Gold
	S: 19 91 19 90 19 89 19 88 19 87
	B: 30,302 33,133 17,160 6,660 . 0 PAST USES OF THE LOCATION(S), INCLUDING ANY INACTIVE OR CLOSED LANDFILLS OR JNDMENTS:
Open pit he	ap leach gold and silver mine. Start up in 1987. Gold and silver
	Merrill-Crowe system. Historic underground mining and associated milli
DESCRIBE TH	om late 1800's to late 1930's.  E FACILITY OPERATIONS, INCLUDING MANUFACTURING OR PRODUCTION D ANY WASTE TREATMENT OR DISPOSAL ACTIVITIES. (ATTACH A SITE DIAGRAM OUTLIN-

# 7B-LIST OF PROCESS MATERIALS USED AT GILT EDGE

<u>Description</u>	<u>Per Yea</u>	Method of  Any One Time	Storage
Borax	23,400#	450# per week	Bag
Sodium Nitrate	4,680#	90# per week	Bag
Soda Ash	4,680#	90# per week	Bag
D.E.	60,800#	39# per week	Bags
L. P. Gas	36,365 gal.	-	Above
Zinc	72,800#	1,400# per week	Cans
Sulfuric Acid	50 gal.	•	glass container/drum
Lime		(Crusher is down)	
Caustic	(5) 55 gal. Drum per year		
Sodium Cyanide	312,000#	6,000# per week	Flow Bins
Peroxide		500,000#/1 lb./ton of ore	
Descalent	10,800 gallons per year		
Fluorospar	4,680#	450# per week	Bag
Lead Nitrate	1,500#	4# per day	Drums

F DI KUNUK 10					*** ***
PLEASE LIST	B. PROC (Platin	MATERIALS USED AT ESS MATERIALS USE g agenta, degreasers, e use additional sheet	D AT LOCATION: heat treating agent	s, cleaning solvents,	etc.)
	QUAN.	TITY OF MATERIAL			F STORAGE
DESCRIPTION B - See L	N PER	/EAR ANY ONE T	ME DRUM	UNDERGROUND TANK	
		•	-	· · · · · · · · · · · · · · · · · · ·	
OR INCREASE	ED) THE RIS	HANGE IN PROCESS IK OF POLLUTION LIA	ABILITY? YES	NO X	ALTERED (LESSENE
DO YOU HAVE	AN ENVIR	ONMENTAL SAFETY	COMMITTEE OR A	NV EMDI OVEER VE	CTED WITH CHECK
RESPONSIBIL	ITY FOR EN	VIRONMENTAL CONT	TROL7 X YES	NO	
	BE THEIR D	UTIES AND TO WHOM	A THEY REPORT:		
		port to the Gener	ral Superintend	ent who has over	rall site
and his ass	istant re	port to the Gener			
and his ass responsibil ARE THERE A TO THE PROT AT PRESENT	istant re ity for p  NY STATUTE ECTION OF COMPLY?		istrative and e OTHER CITY, STATE WHICH APPLY TO A	nvironmental ma	tters. Bulations relatin
and his ass responsibil ARE THERE A TO THE PROTI AT PRESENT O IF SO, GIVE DE	istant re ity for p  NY STATUTE ECTION OF COMPLY? _ ETAILS:	roduction, admini ES, STANDARDS, OR O THE ENVIRONMENT \ YESNO	istrative and e	evironmental man	SULATIONS RELATIN WHICH YOU CANNO
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and his ass responsibil  ARE THERE A TO THE PROTI AT PRESENT ( IF SO, GIVE DE  COMPOSIT  SEMI-SOLID A	ALLS:	roduction, adminites, STANDARDS, OR CONTROL THE ENVIRONMENT VES NO NO NO NO NO DISCHARGE:	OTHER CITY, STATE WHICH APPLY TO A	E AND FEDERAL REGINY LOCATION WITH	AULATIONS RELATING WHICH YOU CANNOT YEARS OTY/YR
and his ass responsibil ARE THERE ATO THE PROTE AT PRESENT OF SO, GIVE DE EFFLUENT TE COMPOSIT SEMI-SOLID A A. ON-SITE DE	ALLS:	roduction, adminitions of the environment of the en	OTHER CITY, STATE WHICH APPLY TO A	E AND FEDERAL REGINY LOCATION WITH	AULATIONS RELATING WHICH YOU CANNOT YEARS OTY/YR

SENT BY:Xarox Telecopier 7021 ; 1- 7-93 ;12:0	112:0398	7-93	1- 1	:	7021	elecobier	BY Xarox	SENT
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U3 001 0123.m

FOR, LANDFILLS OR SURFACE IMPOUNDMENTS, INDICATE SIZE, TYPE OF LINER, ANY MONITORING WELLS, LEACHATE COLLECTION.

8. 4	OF.	F-9	TE	DIS	PO	SAL

	COMPOSITION STORAGE M		LENGTH OF STORAGE	QTY/YR	DISPOSAL FACILITY				
13.	TRANSPORTER INFORMATION:		<del></del>	4					
		_1	<u>-</u>	_5_	3_				
	NAME OF WASTE HAULER	N/A	<del></del>	- <del> </del>					
	EPA ID #			<del></del>					
	STATE ID #	~ <del></del>							
4,	AIR EMISSIONS:								
	NATURE:	COMPO		OSITION:					
	TOXIC GASES & VAPORS	N/A		<del></del>					
	IRRITANT GASES	N/A		<del></del>					
	MALODOROUS GASES & VAPORS	N/A		<del>-</del>					
	ASPHYXIANTS	N/A							
	AEROSOLS	N/A	· · · · · · · · · · · · · · · · · · ·						
	VOLUME PER YEAR (WHERE KNOWN): N/A								
	DESCRIBE METHODS AND EQUIPMENT USED FOR COLLECTION AND TREATMENT OF POLLUTING AIR EMISSIONS:								
	N/A								
5.	THE LOCATION'S SURROUNDING ENVIR	ONMENT:			•				
	A. PLEASE DESCRIBE THE PROPERTIES IMMEDIATELY ADJACENT TO THE LOCATION(S) TO BE COVERED:								
	Blackhills National Forest	and Assoc	iated Forest P	lant Commun	dty				
	B. PLEASE DESCRIBE THE NATURE OF Homestake Mining Company (th approximately 3 miles to the	gold mine in							

# 16. ADDITIONAL INFORMATION:

- PLEASE ATTACH THE LATEST MONITORING RESULTS FOR FACILITY EFFLUENT DISCHARGES, AIR EMISSIONS, LANDFILLS OR SURFACE IMPOUNDMENTS.
- PLEASE ATTACH A SCHEDULE OF ALL STORAGE TANKS INCLUDING THE FOLLOWING INFORMATION:
  CAPACITY, AGE, AROVE OR SELOW GROUND, SHILL CONTAINMENT METHODS, CONTENTS, STEEL 8. ted

17.		OR FIBERGLASS. TYPE OF INVENTORY CONTROL. TESTING METHODS. (See previously submitted to the last 5 years been prosecuted for contravention of any standard or law relating to the release from the location of a substance into sewers, rivers, sea, air or into land? yesX_ no					
		IF 90, GIVE DETAILS:					
	в.	PLEASE DESCRIBE ANY POLLUTION CLAIMS DURING THE LAST 5 YEARS (IF NONE, PLEASE SO STATE);					
		None					
	C.	AT THE TIME OF SIGNING THIS APPLICATION, ARE YOU AWARE OF ANY CIRCUMSTANCES WHICH MAY REASONABLY BE EXPECTED TO GIVE RISE TO A CLAIM UNDER THIS POLICY? YES NO					
		IF SO, GIVE DETAILS:					
		•					
THE A	APPLIC SED C	CANT REPRESENTS THAT THE ABOVE STATEMENTS AND FACTS ARE TRUE AND THAT NO MATERIAL FACTS HAVE BEEN SUP- DR MISSTATED.					
		DINY APPLICANTS:					
Any p mation crime	ereon v n. of c	who knowingly and with intent to defraud any insurance Company or other person files an application for insurance containing any false infor- onceals for the purpose of misleading, information concerning any false material thereto, commits a fraudulent insurance act, which is a					
COMI BINDI BE IS	PLETIC ING CO ISUED.	ON OF THIS FORM DOES NOT BIND COVERAGE. APPLICANT'S ACCEPTANCE OF COMPANY'S QUOTATION IS REQUIRED PRIOR TO OVERAGE AND POLICY ISSUANCE. IT IS AGREED THAT THIS FORM SHALL BE THE BASIS OF THE CONTRACT SHOULD A POLICY AND IT WILL BE ATTACHED TO THE POLICY.					
Appl	icant:	Brohm Mining Corporation					
By:		tin Quick / (Title) Date: January 11, 1993					
	nt/Bro	Ker: Marsh of Molerian Inc.					
Addr	'65B!	1700 Lincoln Suite 4900 Denver CO 80203					

# PLANET INSURANCE COMPANY

MADISON, WISCONSIN

(A Stock Insurance Company Herein Called the Company)

# **POLLUTION LEGAL LIABILITY**

This is a Claims-Made Policy—Please Read Carefully

In consideration of the payment of the premium, in reliance upon the statements in the declarations and application made a part hereof and subject to all the terms of this policy, the Company agrees with the NAMED INSURED as follows:

#### I. INSURING AGREEMENT

To indemnify the INSURED against LOSS the INSURED has or will become legally obligated to pay as a result of CLAIMS first made against the INSURED and reported to the Company, in writing, during the POLICY PERIOD, or EXTENDED DISCOVERY PERIOD if applicable, for POLLUTION CONDITIONS emanating from the locations designated in Item 5 of the Declarations.

#### II. DEFINITIONS

- A. INSURED means the NAMED INSURED and any director, officer, partner or employee thereof while acting within the scope of his/her duties as such.
- B. LOSS means:
  - 1. monetary awards or settlements of compensatory damages arising from:
    - a. BODILY INJURY as defined herein, or
    - b. PROPERTY DAMAGE as defined herein, and
  - 2. costs, charges and expenses incurred in the investigation, adjustment or defense of claims for such compensatory damages.
- C. BODILY INJURY means bodily injury, sickness, disease, mental anguish or shock sustained by any person, including death resulting therefrom caused by POLLUTION CONDITIONS emanating from the locations designated in Item 5 of the Declarations.
- D. PROPERTY DAMAGE means:
  - physical injury to or destruction of tangible property including the resulting loss of use thereof,
  - clean up costs,
  - loss of use of tangible property that has not been physically injured or destroyed;
     provided that such physical injury or destruction, clean up costs and/or loss of use are caused by POLLUTION CONDITIONS emanating from locations designated in Item 5 of the Declarations.
- E. POLICY PERIOD means the period set forth in Item 2 of the Declarations, or any shorter period arising as a result of cancellation.
- F. POLLUTION CONDITIONS means the discharge, dispersal, release or escape of smoke, vapors, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants into or upon land, the atmosphere or any watercourse or body of water, which results in BODILY INJURY or PROPERTY DAMAGE.
- G. NAMED INSURED means the person or entity designated as such in Item 1 of the Declarations.
- H. AUTOMOBILE means a land motor vehicle, trailer or semi-trailer designed for travel on public roads, including any machinery or apparatus attached thereto.
- CLAIM means the assertion of a legal right alleging liability or responsibility on the part of the NAMED INSURED, arising out of POLLUTION CONDITIONS, and shall include but not necessarily be limited to lawsuits or petitions filed against the NAMED INSURED.

#### III. TERRITORY

This policy only applies to claims or suits arising from POLLUTION CONDITIONS in the United States, its territories or possessions or Canada and made or brought in the United States, its territories or possessions or in Canada.

#### IV. EXCLUSIONS

This insurance does not apply to LOSS:

- arising from POLLUTION CONDITIONS existing prior to the inception of this policy, if any officer, director, partner
  or other employee of the NAMED INSURED responsible for environmental affairs, control or compliance knew or
  could have reasonably foreseen that such POLLUTION CONDITIONS could have been expected to give rise to a
  claim;
- 2. from claims or suits seeking non-pecuniary relief;
- 3. arising from the ownership or operation of any "offshore facility" as defined in the Outer Continental Shelf Lands Act Amendments of 1978 or the Clean Water Act of 1977 as amended in 1978, or any "deepwater port" as defined in the Deepwater Port Act of 1974, as amended, nor shall there be any coverage for liability resulting from emissions of drilling fluid, oil, gas or other fluids from any oil, gas, mineral, water or geothermal well of any nature whatsoever;

- 4. arising under any worker's compensation, unemployment compensation or disability benefits law or similar law;.
- 5. arising from injury to any employee of the INSURED if such injury occurs during and in the course of said employment;
- 6. arising as a result of liability of others assumed by the INSURED under any contract or agreement;
- arising as a result of PROPERTY DAMAGE or BODILY INJURY to or at the location(s) designated in Item 5 of the Declarations, even if such PROPERTY DAMAGE or BODILY INJURY is incurred to avoid or mitigate BODILY IN-JURY or PROPERTY DAMAGE which may be covered under this policy;
- arising from clean up costs incurred for the remediation of soil and/or groundwater contamination to or at the location(s) designated in Item 5 of the Declarations, even if such clean up costs are incurred to avoid or mitigate BODILY INJURY or PROPERTY DAMAGE which may be covered under this policy;
- arising out of the ownership, maintenance, use, operation, loading or unloading of any automobile, aircraft, watercraft or rolling stock;
- 10. arising from POLLUTION CONDITIONS emanating from the location(s) designated in Item 5 of the Declarations, once such location(s) are sold, leased, given away, abandoned or operational control has been relinquished;
- 11. A. Under any Liability Coverage, to BODILY INJURY or PROPERTY DAMAGE
  - with respect to which an INSURED under this policy is also an insured under a nuclear energy liability policy issued by Nuclear Energy Liability Insurance Association, Mutual Atomic Energy Liability Underwriters or Nuclear Insurance Association of Canada, or would be an insured under any such policy but for its termination upon exhaustion of its limit of liability; or
  - 2. resulting from the HAZARDOUS PROPERTIES of NUCLEAR MATERIAL and with respect to which (a) any person or organization is required to maintain financial protection pursuant to the Atomic Energy Act of 1954, or any law amendatory thereof, or (b) the INSURED is, or had this policy not been issued would be, entitled to indemnity from the United States of America, or any agency thereof, under any agreement entered into by the United States of America, or any agency thereof, with any person or organization.
  - B. Under any Liability Coverage, to BODILY INJURY or PROPERTY DAMAGE resulting from the HAZARDOUS PROPERTIES of NUCLEAR MATERIAL, if
    - the NUCLEAR MATERIAL (a) is at any NUCLEAR FACILITY owned by, or operated by or on behalf of, an INSURED or (b) has been discharged or dispersed therefrom;
    - 2. the NUCLEAR MATERIAL is contained in SPENT FUEL or WASTE at any time possessed, handled, used, processed, stored, transported or disposed of by or on behalf of an INSURED; or
    - 3. the BODILY INJURY or PROPERTY DAMAGE arises out of the furnishing by an INSURED of services, materials, parts or equipment in connection with the planning, construction, maintenance, operation or use of any NUCLEAR FACILITY, but if such facility is located within the United States of America, its territories or possessions or Canada, this exclusion (3) applies only to PROPERTY DAMAGE to such NUCLEAR FACILITY and any property thereat.
  - C. As used in this exclusion:
    - "HAZARDOUS PROPERTIES" include radioactive, toxic or explosive properties;
    - "NUCLEAR MATERIAL" means SOURCE MATERIAL, SPECIAL NUCLEAR MATERIAL or BYPRODUCT MATERIAL;
    - "SOURCE MATERIAL", "SPECIAL NUCLEAR MATERIAL", and "BYPRODUCT MATERIAL" have the meanings given them in the Atomic Energy Act of 1954 or in any law, amendatory thereof;
    - "SPENT FUEL" means any fuel element or fuel component, solid or liquid, which has been used or exposed to radiation in a NUCLEAR REACTOR;
    - "WASTE" means any waste material (1) containing BYPRODUCT MATERIAL and (2) resulting from the operation by any person or organization of any NUCLEAR FACILITY included within the definition of NUCLEAR FACILITY under paragraph (a) or (b) thereof;
    - "NUCLEAR FACILITY" means
    - 1. any NUCLEAR REACTOR,
    - 2. any equipment or device designed or used for (1) separating the isotopes of uranium or plutonium, (2) processing or utilizing SPENT FUEL, or (3) handling, processing or packaging WASTE,
    - any equipment or device used for the processing, fabricating or alloying of SPECIAL NUCLEAR MATERIAL if any time the total amount of such material in the custody of the INSURED at the premises where such equipment or device is located consists of or contains more than 25 grams of plutonium or uranium 233 or any combination thereof, or more than 250 grams of uranium 235,
    - any structure, basin, excavation, premises or place prepared or used for the storage of disposal of WASTE,

and includes the site on which any of the foregoing is located, all operations conducted on such site and all premises used for such operations;

- "NUCLEAR REACTOR" means any apparatus designed or used to sustain nuclear fission in a self-supporting chain reaction or to contain a critical mass of fissionable material;
- "PROPERTY DAMAGE" includes all forms of radioactive contamination of property;
- 12. arising out of goods or products manufactured, sold, handled, distributed, altered or repaired by the INSURED or by others trading under his name including any container thereof, or any reliance upon a representation of warranty made at any time with respect thereto, but only if the BODILY INJURY or PROPERTY DAMAGE occurs away from premises owned, operated or leased to the INSURED or after physical possession of such has been relinquished to others;

4. The Company shall have the right but not the duty to assume the adjustment of any claim or the defense of any suit. In case of the exercise of this right, the INSURED, on demand of the Company, shall promptly reimburse the Company for any element of LOSS falling within the INSURED's retentions. The INSURED shall assist and cooperate with the Company.

#### VIII. CONDITIONS

- 1. INSPECTION AND AUDIT—The Company shall be permitted but not obligated to inspect, sample and monitor on a continuing basis the INSURED'S property or operations, at any time. Neither the Company's right to make inspections, sample and monitor nor the actual undertaking thereof nor any report thereon shall constitute an undertaking, on behalf of the INSURED or others, to determine or warrant that property or operations are safe, healthful or conform to acceptable engineering practice or are in compliance with any law, rule or regulation.
- 2. CANCELLATION—This policy may be cancelled by the NAMED INSURED by surrender thereof to the Company or any of its authorized agents or by mailing to the Company written notice stating when thereafter the cancellation shall be effective. This policy may be cancelled by the Company by mailing to the NAMED INSURED at the address shown in this policy, written notice stating when not less than 30 days (10 days for non-payment of premium) threafter such cancellation shall be effective. The mailing of notice as aforesaid shall be sufficient proof of notice. The time of surrender or the effective date and hour of cancellation stated in the notice shall become the end of the POLICY PERIOD. Delivery of such written notice either by the NAMED INSURED or by the Company shall be equivalent to mailing.
  - If the NAMED INSURED cancels, earned premium shall be computed in accordance with the customary short rate table and procedure. If the Company cancels, earned premium shall be computed pro rata. Premium adjustment may be made either at the time cancellation is effected or as soon as practicable after cancellation becomes effective, but payment or tender of unearned premium is not a condition of cancellation.
- 3. DECLARATIONS—By acceptance of this policy, the INSURED agrees that the statements in the declarations and application are his agreements and representations, that this policy is issued in reliance upon the truth of such representations and that this policy embodies all agreements existing between himself and the Company or any of its agents relating to this insurance.
- 4. ACTION AGAINST COMPANY—No action shall lie against the Company unless, as a condition precedent thereto, there shall have been full compliance with all of the terms of this policy, nor until the amount of the INSURED'S obligation to pay shall have been finally determined either by judgement against the INSURED after actual trial or by written agreement of the INSURED, the claimant and the Company.
  - Any person or organization or the legal representative thereof who has secured such judgment or written agreement shall thereafter be entitled to recover under this policy to the extent of the insurance afforded by this policy. No person or organization shall have any right under this policy to join the Company as a party to any action against the INSURED to determine the INSURED'S liability, nor shall the Company be impleaded by the INSURED or his legal representative. Bankruptcy or insolvency of the INSURED or of the INSURED'S estate shall not relieve the Company of any of its obligations hereunder.
- ASSIGNMENT—Assignment of interest under this policy shall not bind the Company until its consent is endorsed thereon.
- 6. SUBROGATION—In the event of any payment under this policy, the Company shall be subrogated to all the IN-SURED'S rights of recovery therefor against any person or organization and the INSURED shall execute and deliver instruments and papers and do whatever else is necessary to secure such rights. The INSURED shall do nothing after loss to prejudice such rights.
- 7. CHANGES—Notice to any agent or knowledge possessed by any agent or by any other person shall not effect a waiver or a change in any part of this policy or estop the Company from asserting any right under the terms of this policy; nor shall the terms of this policy be waived or changed, except by endorsement issued to form a part of this policy.
- SOLE AGENT—The INSURED first named in Item 1 of the declarations shall act on behalf of all INSUREDS for the
  payment or return of premium, receipt and acceptance of any endorsement issued to form a part of this policy, giving and receiving notice of cancellation or non-renewal, and the exercise of the rights provided in the EXTENDED
  DISCOVERY PERIOD clause.
- 9. CHOICE OF LAW—In the event that the INSURED and the Company dispute the meaning, interpretation or operation of any term, condition, definition or provision of this policy resulting in litigation, arbitration or other form of dispute resolution, the INSURED and the Company agree that the law of the State of New York shall apply and that all litigation, arbitration or other form of dispute resolution shall take place in New York. In the event the INSURED and the Company agree to resolve their dispute by arbitration any such arbitration shall be in accordance with the commercial arbitration rules of the American Arbitration Association.
- 10. OTHER INSURANCE—Where other valid and collectable insurance is available to the NAMED INSURED for LOSSES covered under the terms and conditions of the policy the Company's obligation to the INSURED is as follows:
  - This insurance shall apply as excess insurance over any other valid and collectable insurance be it primary or excess.
  - b. Where this insurance is excess over other valid and collectable insurance, the Company will pay only its share of the amount of LOSS, if any, that exceeds the total amount that all such other insurance will pay for the LOSS in the absence of this insurance.

IN WITNESS WHEREOF the Company has caused this policy to be signed by its president and secretary and countersigned on the declarations page by a duly authorized agent of the Company.

Linda C. Holm

- 13. -arising out of operations performed by or on behalf of the INSURED or reliance upon a representation of warranty made at any time with respect thereto, but only if the BODILY INJURY or PROPERTY DAMAGE occurs after such operations have been completed or abandoned and occurs away from premises owned, operated or leased to the INSURED. "Operations" include materials, parts or equipment furnished in connection therewith. Operations shall be deemed completed at the earliest of the following times:
  - a. When all operations to be performed by or on behalf of the INSURED under the contract have been completed,
  - b. When all operations to be performed by or on behalf of the INSURED at the site of the operations have been completed, or
  - c. When the portion of the work out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.
- 14. due to PROPERTY DAMAGE to goods or products manufactured, sold, handled or distributed by the INSURED arising out of such goods or products or any part thereof, or due to PROPERTY DAMAGE to work performed by or on behalf of the INSURED arising out of the work or any portion thereof, or out of materials, parts or equipment furnished in connection therewith;
- 15. arising from POLLUTION CONDITIONS based upon or attributable to the INSURED's intentional, willful or deliberate non-compliance with any statute, regulation, ordinance, administrative complaint, notice of violation, notice letter, executive order, or instruction of any governmental agency or body;
- 16. arising from POLLUTION CONDITIONS based upon or attributable to acid rain conditions;
- 17. arising from any consequence, whether direct or indirect, of war, invasion, act of foreign enemy, hostilities (whether war be declared or not), civil war, rebellion, revolution, insurrection or military or usurped power, strike, riot or civil commotion.

#### V. EXTENDED DISCOVERY PERIOD

The provisions of this clause shall only apply if a period of at least 12 months has elapsed from the date set forth in Item 7 of the Declarations when the NAMED INSURED seeks to exercise the option hereunder.

The NAMED INSURED shall be entitled to an extension of this coverage on non-renewal or cancellation of the policy subject to the following terms and conditions:

- 1. Where cancellation or non-renewal is by the Company, the NAMED INSURED shall be entitled to purchase 12 months extension from the date of cancellation or expiration of the policy upon payment of an additional premium of not more than 200% of the premium shown in Item 6 of the Declarations.
- 2. Where cancellation or non-renewal is by the NAMED INSURED, the NAMED INSURED shall be entitled to purchase 12 months extension from the date of cancellation or expiration of the policy upon payment of an additional premium of not more than 200% of the premium shown in Item 6 of the Declarations.

The extension of coverage granted hereunder shall only apply as respects POLLUTION CONDITIONS existing as of or prior to the date of expiration or cancellation of this policy, and otherwise covered by this policy. It is a condition precedent to the operation of the rights granted under this clause that payment of the appropriate premium shall be made not later than ten days after expiration in the case of non-renewal or prior to cancellation in the case of cancellation.

For purposes of this clause the quotation of different terms and conditions by the Company shall not be construed as non-renewal.

#### VI. LIMIT OF LIABILITY AND RETENTION

This policy is to pay 100% of any LOSS in excess of the retention amount stated in Item 4 of the Declarations. The retention amount is to be borne by the INSURED and is not to be insured. All LOSS arising out of the same or related POLLUTION CONDITIONS at any one location shall be considered a single LOSS, and the limit of liability shown in Item 3 of the Declarations as applicable to "each loss" shall apply.

Subject to the foregoing, the Company's total liability for all LOSSES from claims first made against the INSURED and reported in writing to the Company during the POLICY PERIOD and including the EXTENDED DISCOVERY PERIOD, if applicable, shall not exceed the limit of liability shown in Item 3 of the Declarations as applicable to the "Total for all LOSSES".

#### VII. CLAIM OR SUIT PROVISIONS

- 1. In the event of a claim or suit, immediate written or oral notice containing particulars sufficient to identify the IN-SURED and also reasonably obtainable information with respect to the time, place and circumstances thereof, and the names and addresses of the injured and of available witnesses, shall be given by or for the INSURED to the Company or any of its authorized agents. In the event of oral notice, the INSURED agrees to furnish a written report as soon as possible.
- 2. If claim is made or suit is instituted against the INSURED, the INSURED shall immediately forward to the Company every demand, notice, summons, order or other process received by the INSURED or the INSURED'S representative.
- 3. No costs, charges or expenses shall be incurred without the Company's consent which shall not be unreasonably withheld. The Company shall have the right but not the duty to designate legal counsel to associate in the investigation of claims and the defense of suits. The INSURED shall not admit liability or settle any claim or suit without the Company's consent. If the Company recommends a settlement of a claim or suit:
  - for an amount within the retention and the INSURED refuses such settlement, the Company shall not be liable for any LOSS in excess of the retention;
  - b. for a total amount in excess of the balance of the retention and the INSURED refuses such settlement, the Company's liability for LOSS shall be limited to that portion of the recommended settlement and the costs, charges and expenses as of the INSURED's refusal which exceed the rentention and fall within the Limit of Liability.

January 19, 1993

Ms. Jenny Hill Marsh & McLennan, Inc. One Norwest Center 1700 Lincoln Street, Suite 4900 Denver, CO 80203-4549

ECS Underwriting, Inc.

One East Uwchlan Avenue Suite 300 Exton, Pennsylvania 19341 (215) 269-6731 (800) ECS-1414 Hastide Pennsylvania) Eax (215) 524-5354 RE: Minven Gold Corp./Brohm Mining Corp.
Policy #NTA2509593

Dear Jenny:

This letter is to follow-up our conference call with Roxanne Giedd, Marvin Trube and Martin Quick.

During the course of our conversation, some concern was raised concerning the applicability of Exclusion No. 15 of the Pollution Legal Liability policy. Please note that this policy is designed to provide coverage for Bodily Injury/Property Damage including cleanup of pollution conditions emanating from the covered site. This would include any CLAIM against the Named Insured requiring cleanup of an offsite property even if the Named Insured was no longer solvent (ie. in bankruptcy) or failed to conduct the offsite cleanup.

However, through the application of Exclusion no. 15, this policy does not provide coverage for the Named Insured's intentional, willful, or deliberate non-compliance that leads to a pollution condition. Also, excluded under this item is damage caused by disgruntled employees. In both cases, ECS cannot be held accountable for the individual, deliberate and illegal acts of employees.

I hope this has adequately addressed your concerns. If you should have any further questions, please contact me.

Sincerely,

Brian Lynch Underwriter

BL/ns

cc: Paul Murdoch Scott Britt Steve Goebner

# MARVIN D. TRUHE

PIRST FEDERAL PLAZA \* 514 FLOOR
P.O. SOX SIOS
RAPID CITY, SOUTH DAKOTA 57709
TELEPHONE (805) 342-2800

MARVIN D. TRUHE DALE R. COCKRELL TELECOPIER (605) 342-250

January 4, 1993

Ms. Roxanne Giedd Assistant Attorney General Office of the Attorney General 500 East Capitol Pierre, SD 57501

TELECOPIED

Re: Brohm Mining Corp. Financial Assurance for Environmental Cleanup

#### Dear Roxanne:

I am writing as a follow-up to my telephone calls to your office last week and again earlier today regarding the above-referenced matter. We have reviewed with the insurance company your December 7, 1992 letter in which you raised questions about the environmental insurance policy submitted to you earlier. I understand that there have been some subsequent conversations between Brohm, the insurance carrier, your office, and Mike Cepak regarding the resolution of some of these questions. The purpose of my calls is to request a meeting with you and Mike Cepak in Pierre, which would be attended by Martin Quick of Brohm, myself, and a representative of the insurance carrier (in person or by telephone). It would be our intent to try to resolve any remaining issues regarding the policy.

Martin Quick will be in Pierre to meet with the DENR on an unrelated matter on Wednesday morning, January 6, 1993. If you could be available later that afternoon, I would come over also for the meeting. We would like to get this matter resolved before the next Board of Minerals meeting, which I presume is scheduled for January 21, 1993. When I last spoke to you about this on November 18, 1992, you indicated that you would request an extension from the Board if that became necessary. Is that still your intent?

Ms. Roxanne Giedd January 4, 1993 Page 2

Please give me a call if you could be available on Wednesday or if not, to suggest an alternate date for us to meet. Thank you for your consideration.

Sincerely,

Marvin D. Truhe

MDT/cdv

Martin Quick (via telecopy only)

Mike Cepak (via telecopy only) Rod MacLeod

MARVIN D. TRUHE LAW OFFICES

Metropolitan Federal Bank Plaza
5th Floor
P.O. Box 8106
Rapid City, SD 57709
Telephone (605) 342-2800
Telecopier (605) 342-2801

Marvin D. Truhe Dale R. Cockrell

### TELECOPIER TRANSMITTAL LETTER

DATE:	January 4, 1993						
TO:	Mart	in Quick					
FROM:	Mar	v Truhe					
OPERATO	R:	Cori Veren	-, - <u> </u>				
3	pages	including	this	cover	sheet.		

If you do not receive all pages, please call (605) 342-2800. Thank you.

The information contained in this facsimile message is attorney privileged and confidential information intended only for the use of the individual or entity named above. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please immediately notify us by telephone at the number above and return the original of this transmittal to us at the address above via the U.S. Postal Service. Thank you.

# INSURANCE SUMMARY DAKOTA MINING CORPORATION POLLUTION CLEAN UP

This account summary is a brief outline of the coverages afforded under your insurance policies. Since it is information only, it should not be construed to constitute the entire insurance contract. As your policies may contain additional coverages and restrictions, the exact wording should be consulted.

# Presented by:

Andrea J.S. Schroeder, CPCU, ARM, Assistant Vice President Shanan Cale, Client Representative

> MARSH & McLENNAN, INCORPORATED Independence Plaza 1050 Seventeenth Street, Suite 900 Denver, Colorado 80265 (303) 628-9111

> > March, 1995

Marsh & MCLENNAN

#### **DAKOTA MINING**

#### FIRST PARTY POLLUTION CLEAN-UP

POLICY NO.:

NTD250951402

POLICY PERIOD:

JANUARY 18, 1995 TO JANUARY 18, 1996 RELIANCE NATIONAL INDEMNITY COMPANY -

ECS UNDERWRITING

PREMIUM:

INSURER:

\$ 48,970

LOCATION:

Gilt Edge Mine

Deadwood, South Dakota

**INSURING AGREEMENT:** 

To indemnify the insured for Clean-Up Costs, only, incurred by the insured as a result of claims first made against the insured and reported to the company, in writing, during the policy period or Extended Discovery Period, if applicable, for

Environmental Damage on or at the Gilt Edge Mine

**COVERAGE:** 

**CLAIMS-MADE** 

\$ 318,000 Per Claim

\$ 318,000 Total All Claims

\$ 50,000 Self Insured Retention - Per Claim

**EXCLUSIONS:** 

- · Underground Tanks and Underground Piping
- · Radioactive Material
- Non-owned Disposal Sites
- Asbestos matter
- · Presence or Required Removal or Abatement of lead paint
- Known Environmental Damage existing prior to inception of policy
- Compensatory Damage
- "Offshore Facility" or "Deepwater Port"
- · Liability of others assumed under any contract or agreement
- Liability arising for Property Damage or Bodily Injury
- Environmental Damage on location once property is sold, leased, given away, abandoned or operational control relinquished
- Nuclear material
- Clean up costs from Hazardous Properties of Nuclear material

#### **DAKOTA MINING**

# FIRST PARTY POLLUTION CLEAN-UP (Continued)

# EXCLUSIONS: (Continued)

- Cost, charges, or expenses associated with the defense of any administrative and/or legal proceeding of any kind
- Fines, Penalties, Exemplary Damages
- Intentional Non-Compliance with Regulation
- Acid Rain
- Monitoring Following Cleanup

# **CONDITIONS:**

- 30 Day Notice of Cancellation; 10 Days for non-payment of premium
- · Additional Insured State of South Dakota

# RELIANCE NATIONAL INDEMNITY COMPANY MADISON, WISCONSIN

(A Stock Insurance Company Herein Called the Company)

## **POLLUTION CLEAN-UP POLICY**

This is a Claims-Made Policy-Please Read Carefully

In consideration of the payment of the premium, in reliance upon the statements in the declarations and application made a part hereof and subject to all the terms of this policy, the Company agrees with the NAMED INSURED as follows:

#### I. INSURING AGREEMENT

To indemnify the INSURED for CLEAN-UP COSTS only, incurrred by the INSURED as a result of CLAIMS first made against the INSURED and reported to the Company, in writing, during the POLICY PERIOD, or EXTENDED DISCOVERY PERIOD if applicable, for ENVIRONMENTAL DAMAGE on or at the location(s) designated in Item 5 of the Declarations.

#### II. DEFINITIONS

- A. INSURED means the NAMED INSURED and any director, officer, partner or employee thereof while acting within the scope of his/her duties as such.
- B. CLEAN-UP COSTS means expenses for the removal or neutralization of solid, liquid, gaseous or thermal contaminants, irritants or pollutants on or at the location(s) designated in Item 5 of the Declarations. CLEAN-UP COSTS do not include expenses associated with the defense of any administrative and/or legal proceeding of any kind.
- C. BODILY INJURY means bodily injury, sickness, disease, mental anguish or shock sustained by any person, including death resulting therefrom.
- D. PROPERTY DAMAGE means:
  - 1. physical injury to or destruction of tangible property including the resulting loss of use thereof;
  - 2. loss of use of tangible property that has not been physically injured or destroyed.
- E. POLICY PERIOD means the period set forth in Item 2 of the Declarations, or any shorter period arising as a result of cancellation.
- F. ENVIRONMENTAL DAMAGE means the injurious presence in or upon land, the atmosphere or body of water, of solid, liquid, gaseous or thermal contaminants, irritants or pollutants.
- G. NAMED INSURED means the person or entity designated as such in Item 1 of the Declarations.
- H. CLAIM means CLEAN-UP COSTS incurred by the insured in the discharge of a legal obligation validly imposed through governmental action which is initiated during the policy period because of ENVIRONMENTAL DAMAGE to which this insurance applies.

#### III. TERRITORY

This policy only applies to claims arising from ENVIRONMENTAL DAMAGE in the United States, its territories or possessions or Canada and made or brought in the United States, its territories or possessions or in Canada.

#### IV. EXCLUSIONS

This insurance does not apply to:

- CLAIMS arising from ENVIRONMENTAL DAMAGE existing prior to the inception of this policy, if any officer, director, partner
  or other employee of the NAMED INSURED responsible for environmental affairs, control or compliance knew or could
  have reasonably foreseen that such ENVIRONMENTAL DAMAGE could have been expected to give rise to a claim;
- 2. CLAIMS seeking non-pecuniary relief, including but not limited to fines, penalties or exemplary damages;
- CLAIMS seeking compensatory damages:
- 4. CLAIMS arising from the ownership or operation of any "offshore facility" as defined in the Outer Continental Shelf Lands Act Amendment of 1978 or the Clean Water Act of 1977 as amended in 1978, or any "deepwater port" as defined in the Deepwater Port Act of 1974, as amended, nor shall there be any coverage for liability resulting from emissions of drilling fluid, oil, gas or other fluids from any oil, gas, mineral, water or geothermal well of any nature whatsoever;
- 5. liability arising under any worker's compensation, unemployment compensation or disability benefits law or similar law:
- 6. liability arising from injury to any employee of the INSURED if such injury occurs during and in the course of said employment;
- 7. liability arising as a result of others assumed by the INSURED under any contract or agreement;
- 8. liability arising as a result of PROPERTY DAMAGE or BODILY INJURY;
- CLAIMS arising out of the ownership, maintenance, use, operation, loading or unloading of any automobile, aircraft, watercraft or rolling stock; except when on or at the location(s) designated in Item 5 of the Declarations;
- 10. CLAIMS arising from ENVIRONMENTAL DAMAGE on or at the location(s) designated in Item 5 of the Declarations, once such locations(s) are sold, leased, given away, abandoned or operational control has been relinquished;

- 11. A. Under any Liability Coverage, to CLEAN-UP COSTS
  - with respect to which an INSURED under this policy is also an insured under a nuclear energy liability policy issued by Nuclear Energy Liability Insurance Association, Mutual Atomic Energy Liability Underwriters or Nuclear Insurance Association of Canada, or would be an insured under any such policy but for its termination upon exhaustion of its limit of liability; or
  - 2. resulting from HAZARDOUS PROPERTIES of NUCLEAR MATERIAL and with respect to which (a) any person or organization is required to maintain financial protection pursuant to the Atomic Energy Act of 1954, or any law amendatory thereof, or (b) the INSURED is, or had this policy not been issued would be, entitled to indemnity from the United States of America, or any agency thereof, under any agreement entered into by the United States of America, or any agency thereof, with any person or organization.
- B. Under any Liability Coverage, to CLEAN-UP COSTS resulting from the HAZARDOUS PROPERTIES OF NUCLEAR MATERIAL, if
  - 1. the NUCLEAR MATERIAL (a) is at any NUCLEAR FACILITY owned by, or operated by or on behalf of, an INSURED or (b) has been discharged or dispersed therefrom;
  - the NUCLEAR MATERIAL is contained in SPENT FUEL or WASTE at any time possessed, handled, used, processed, stored, transported or disposed of by or on behalf of an INSURED; or
  - 3. the CLEAN-UP COSTS arising out of the furnishing by an INSURED of services, materials, parts or equipment in connection with the planning, construction, maintenance, operation or use of any NUCLEAR FACILITY.
- C. As used in this exclusion:
  - "HAZARDOUS PROPERTIES" including radioactive, toxic or explosive properties;
  - "NUCLEAR MATERIAL" means SOURCE MATERIAL, SPECIAL NUCLEAR MATERIAL OR BYPRODUCT MATERIAL;
  - "SOURCE MATERIAL," "SPECIAL NUCLEAR MATERIAL," AND "BYPRODUCT MATERIAL" have the meanings given them in the Atomic Energy Act of 1954 or in any law, amendatory thereof;
  - "SPENT FUEL" means any fuel element or fuel component, solid or liquid, which has been used or exposed to radiation in a NUCLEAR REACTOR;
  - "WASTE" means any waste material (1) containing BYPRODUCT MATERIAL and (2) resulting from the operation by any person or organization of any NUCLEAR FACILITY included within the definition of NUCLEAR FACILITY under paragraph (a) or (b) thereof;
  - "NUCLEAR FACILITY" means
  - 1. any NUCLEAR REACTOR,
  - 2. any equipment or device designed or used for (1) separating the isotopes of uranium or plutonium (2) processing or utilizing SPENT FUEL, or (3) handling, processing or packaging WASTE,
  - any equipment or device used for the processing, fabricating or alloying of SPECIAL NUCLEAR MATERIAL if any time the total amount of such material in the custody of the INSURED at the premises where such equipment or device is located consists of or contains more than 25 grams of plutonium or uranium 233 or any combination thereof, or more than 250 grams of uranium 235,
  - 4. any structure, basin, excavation, premises or place prepared or used for the storage of disposal of WASTE,
  - and includes the site on which any of the foregoing is located, all operations conducted on such site and all premises used for such operations;
  - "NUCLEAR REACTOR" means any apparatus designed or used to sustain nuclear fission in a self-supporting chain reaction or to contain a critical mass of fissionable material;
- 12. CLAIMS arising from ENVIRONMENTAL DAMAGE based upon or attributable to the INSURED's intentional, willful or deliberate non-compliance with any statute, regulation, ordinance, administrative complaint, notice of violation, notice letter, executive order, or instruction of any governmental agency or body;
- 13. arising from ENVIRONMENTAL DAMAGE based upon or attributable to acid rain conditions;
- 14. arising from any consequence, whether direct or indirect, of war, invasion, act of foreign enemy, hostilities (whether war be declared or not), civil war, rebellion, revolution, insurrection or military or usurped power, strike, riot or civil commotion;
- 15. liability arising out of any monitoring, sampling, analyzing or testing following the removal or neutralization of solid, liquid, gaseous or thermal contaminants, irritants or pollutants.
- 16. CLAIMS arising from ENVIRONMENTAL DAMAGE on or at location(s) other than those designated in Item 5 of the Declarations even if such ENVIRONMENTAL DAMAGE is emanating from a designated location(s).
- 17. any costs, charges or expenses associated with the defense of any administrative and/or legal proceeding of any kind.

#### V. EXTENDED DISCOVERY PERIOD

The NAMED INSURED shall be entitled to an extension of this coverage on non-renewal or cancellation of the policy subject to the following terms and conditions:

Where cancellation or non-renewal is by the Company, the NAMED INSURED shall be entitled to purchase 12 months
extension from the date of cancellation or expiration of the policy upon payment of an additional premium of not more

2. Where cancellation or non-renewal is by the NAMED INSURED, the NAMED INSURED shall be entitled to purchase 12 months extension from the date of cancellation or expiration of the policy upon payment of an additional premium of not more than 200% of the premium shown in Item 6 of the Declarations.

The extension of coverage granted hereunder shall only apply as respects ENVIRONMENTAL DAMAGE existing as of or prior to the date of expiration or cancellation of this policy, and otherwise covered by this policy. It is a condition precedent to the operation of the rights granted under the clause that payment of the appropriate premium shall be made not later than ten days after expiration in the case of non-renewal or prior to cancellation in the case of cancellation.

For purposes of this clause the quotation of different terms and conditions by the Company shall not be construed as nonrenewal.

#### VI. LIMIT OF LIABILITY AND RETENTION

This policy is to pay 100% of CLEAN-UP COSTS in excess of the retention amount stated in Item 4 of the Declarations. The retention amount is to be borne by the INSURED and is not to be insured. All CLEAN-UP COSTS arising out of the same or related ENVIRONMENTAL DAMAGE at any one location shall be considered a single CLEAN-UP COST.

Subject to the foregoing, the Company's total liability for all CLEAN-UP COSTS from claims first made against the INSURED and reported in writing to the Company during the POLICY PERIOD and including the EXTENDED DISCOVERY PERIOD, if applicable, shall not exceed the limit of liability shown in Item 3 of the Declarations as applicable to the "Annual Aggregate."

#### VII. CLAIM PROVISIONS

- 1. In the event of a claim, immediate written or oral notice containing particulars sufficient to identify the INSURED and also reasonably obtainable information with respect to the time, place and circumstances thereof, shall be given by or for the INSURED to the Company or any of its authorized agents. In the event of oral notice, the INSURED agrees to furnish a written report as soon as possible. The INSURED shall immediately forward to the Company every demand, notice, summons, order or other process received by the INSURED or the INSURED's representative.
- 2. The INSURED shall cooperate with the Company and upon the Company's request shall submit to examination and interrogation by a representative of the Company, under oath if required, and shall attend hearings, depositions and trials and shall assist in effecting settlement, securing and giving evidence, obtaining the attendance of witnesses and in the conduct of suits, as well as in the purpose of investigation and/or defense, all without charge to the Company. The INSURED shall further cooperate with the Company and do whatever is necessary to secure and effect any rights of indemnity, contribution or apportionment which the INSURED may have. The INSURED shall not, except at his own costs, make any payment, admit any liability, settle any claims, assume any obligation or incur any expense without the written consent of the Company.
- 3. In the event of any ENVIRONMENTAL DAMAGE or knowledge of any circumstance not previously disclosed that might reasonably be expected to result in an ENVIRONMENTAL DAMAGE, the INSURED shall promptly take all reasonable steps to prevent injury or damage from arising out of the ENVIRONMENTAL DAMAGE or circumstances and notify the Company of such circumstances or preventive measures immediately.
- 4. No costs, charges or expenses shall be incurred without the Company's consent which shall not be unreasonably withheld. If the Company recommends a settlement of a claim:
  - a. for an amount within the retention and the INSURED refuses such settlement, the Company shall not be liable for CLEAN-UP COSTS in excess of the retention:
  - b. for a total amount in excess of the balance of the retention and the INSURED refuses to such settlement, the Company's liability for CLEAN-UP COSTS shall be limited to that portion of the recommended settlement and the costs, charges and expenses as of the INSURED's refusal which exceed the retention and fall within the Limit of Liability.
- 5. The Company shall have the right but not the duty to assume the adjustment of any claim. In case of exercise of this right, the INSURED, on demand of the Company, shall promptly reimburse the Company for any element of CLEAN-UP COSTS falling within the INSURED's retentions. The INSURED shall assist and cooperate with the Company.

#### VIII. CONDITIONS

- 1. INSPECTION AND AUDIT The Company shall be permitted but not obligated to inspect on a continuing basis the INSURED's property or operations, at any time. Neither the Company's right to make inspections nor the actual undertaking thereof nor any report thereon shall constitute an undertaking, on behalf of the INSURED or others, to determine or warrant that property or operations are safe, healthful or conform to acceptable engineering practice or are in compliance with any law, rule or regulation.
- 2. CANCELLATION This policy may by cancelled by the NAMED INSURED by surrender thereof to the Company or any of its authorized agents or by mailing to the Company written notice stating when thereafter the cancellation shall be effective. This policy may be cancelled by the Company by mailing to the NAMED INSURED at the address shown on this policy, written notice stating when not less than 30 days (10 days for non-payment of premium) thereafter such cancellation shall be effective. The mailing of notice as aforesaid shall be sufficient proof of notice. The time of surrender or the effective date and hour of cancellation stated in the notice shall become the end of the POLICY PERIOD. Delivery of such written notice either by the NAMED INSURED or by the Company shall be equivalent to mailing.
  - If the NAMED INSURED cancels, earned premium shall be computed in accordance with the customary short rate table and procedure. If the Company cancels, earned premium shall be computed pro rata. Premium adjustment may be made either at the time cancellation is effected or as soon as practicable after cancellation becomes effective, but payment or tender of unearned premium is not a condition of cancellation.

- 3. DECLARATIONS By acceptance of this policy, the INSURED agrees that the statements in the declarations and application are his agreements and representations, that this policy is issued in reliance upon the truth of such representations and that this policy embodies all agreements existing between himself and the Company or any of its agents relating to this insurance.
- 4. ACTION AGAINST COMPANY No action shall lie against the Company unless, as a condition precedent thereto, there shall have been full compliance with all the terms of this policy, nor until the amount of the INSURED's obligation to pay shall have been finally determined either by judgement against the INSURED after actual trial or by written agreement of the INSURED, the claimant and the Company.

Any person or organization or the legal representative thereof who has secured such judgement or written agreement shall thereafter be entitled to recover under this policy to the extent of the insurance afforded by this policy. No person or organization shall have any right under this policy to join the Company as a party to any action against the INSURED to determine the INSURED's liability, nor shall the Company be impleaded by the INSURED or his legal representative. Bankruptcy or insolvency of the INSURED or of the INSURED's estate shall not relieve the Company of any of its obligations hereunder.

- 5. ASSIGNMENT Assignment of interest under this policy shall not bind the Company until its consent is endorsed thereon.
- 6. SUBROGATION In the event of any payment under this policy, the Company shall be subrogated to all the INSURED's rights of recovery therefor against any person or organization and the INSURED shall execute and deliver instruments and papers and do whatever else is necessary to secure such rights. The INSURED shall do nothing after loss to prejudice such rights.
- 7. CHANGES Notice to any agent or knowledge possessed by any agent or by any other person shall not effect a waiver or a change in any part of this policy or estop the Company from asserting any right under the terms of this policy; nor shall the terms of this policy be waived or changed, except by endorsement issued to form a part of this policy.
- SOLE AGENT The INSURED first named in Item 1 of the declarations shall act on behalf of all INSUREDS for the
  payment or return of premium, receipt and acceptance of any endorsement issued to form a part of this policy, giving
  and receiving notice of cancellation or non-renewal, and the exercise of the rights provided in the EXTENDED DISCOVERY
  PERIOD clause.
- 9. OTHER INSURANCE Where other valid and collectable insurance is available to the NAMED INSURED for CLEAN-UP COSTS covered under the terms and conditions of the policy the Company's obligation to the INSURED is as follows:
  - This insurance shall apply as excess insurance over any other valid and collectable insurance be it primary or excess.
  - b. Where this insurance is excess over other valid and collectable insurance, the Company will pay only its share of the amount of CLEAN-UP COSTS, if any, that exceeds the total amount that all such other insurance will pay for the CLEAN-UP COSTS in the absence of this insurance.
- 10. CHOICE OF LAW In the event that the INSURED and the Company dispute the meaning, interpretation or operation of any term, condition, definition or provision of this policy resulting in litigation, arbitration or other form of dispute resolution, the INSURED and the Company agree that the law of the State of New York shall apply and that all litigation, arbitration or other form of dispute resolution shall take place in New York. In the event the INSURED and the Company agree to resolve their dispute by arbitration any such arbitration shall be in accordance with the commercial arbitration rules of the American Arbitration Association.

on the declarations page by and duly authorized agent of the	Company.  M. Dunk
Linda C. Hohn	MANO III I Dumb
Secretary	President

IN WITNESS WHEREOF the Company has caused this policy to be signed by its president and secretary and countersigned

#### RELIANCE NATIONAL INDEMNITY COMPANY MADISON, WISCONSIN

NAMED

AND

DAKOTA MINING CORPORATION/BROHM MINING CORPORATION

INSURED

Post Office Box 485 Deadwood, SD 57732

POST OFFICE

#### FIRST PARTY POLLUTION CLEAN-UP **DECLARATIONS**

#### THIS IS A CLAIMS-MADE POLICY--PLEASE READ CAREFULLY

POLICY N	UMBER: NTD2509	51402
Item 1:	NAMED INSURED	DAKOTA MINING CORPORATION/BROHM MINING CORPORATION
	ADDRESS	Post Office Box 485
		Deadwood, SD 57732
Item 2:	POLICY PERIOD	
	FROM January 12:01 A.M. sta above.	18, 1995 TO January 18, 1996  ndard time at the address of the NAMED INSURED shown
Item 3:	LIMIT OF LIABI	LITY, up to \$318,000 each LOSS
		\$318,000 TOTAL FOR ALL LOSSES
Item 4:	RETENTION \$50	,000 each LOSS
Item 5:	COVERED LOCATI	ON(S): Gilt Edge Mine, Deadwood, South Dakota
Item 6:	POLICY PREMIUM	\$48,970
Item 7:	EXTENDED DISCO	VERY CLAUSE DATE: September 29, 1992
ENDORSEM	ENTS ATTACHED T	O THIS POLICY: Endorsements #1,2,3
Broker:	Marsh & McLenn 3400 Texas Com 2200 Ross Aven Dallas, TX 72	merce Tower nue

Saul Martal

Authorized Representative RMS/lvt 01/27/95

#### ENDORSEMENT #1

This endorsement, effective 12:01 a.m., January 18, 1995 forms a part of Policy No. NTD250951402 issued to DAKOTA MINING CORPORATION/BROHM MINING CORPORATION by Reliance National Indemnity Company.

#### STANDARD ENDORSEMENT

In consideration of the premium paid, it is agreed that Section IV. EXCLUSIONS is amended by the addition of the following exclusions:

- Radioactive Matter Exclusion: CLAIMS arising from the actual, alleged or threatened exposure of person(s) or property to any radioactive matter except where specifically endorsed onto the Policy.
- Non-Owned Disposal Site Exclusion: CLAIMS arising from waste or materials transported via automobile, aircraft, watercraft or rolling stock beyond the boundaries of the covered locations identified in the Declarations.
- Underground Tank and Underground Piping Exclusion: CLAIMS arising from the presence or use of any underground tank or underground piping to or at the covered locations identified in the Declarations.
- Absolute Asbestos Exclusion: CLAIMS arising from the presence or required removal, cleanup, encapsulation, or disposal of asbestos products, fibers, or asbestos dust.
- Superfund Exclusion: CLAIMS arising from locations designated as being either proposed for or on the National Priorities List or on any state "Superfund" list unless specifically scheduled onto the Policy by endorsement.

All other terms and conditions remain the same.

(Authorized Representative)

Level Murlal

RMS/lvt (01/27/95)

RNENVL-FPL-100 (6/94)

#### **ENDORSEMENT #2**

This endorsement, effective 12:01 a.m., January 18, 1995 forms a part of Policy No. NTD250951402 issued to DAKOTA MINING CORPORATION/BROHM MINING CORPORATION by Reliance National Indemnity Company.

#### LEAD PAINT EXCLUSION

In consideration of the premium paid, it is agreed that Section IV. EXCLUSIONS is amended by the addition of the following exclusion:

 CLAIMS arising from the presence or required removal or abatement of lead paint.

All other terms and conditions remain the same.

(Authorized Representative)

RMS/lvt (01/27/95)

RNENVL-FPL-101 (6/94)

#### ENDORSEMENT #3

This endorsement, effective 12:01 a.m., January 18, 1995 forms a part of Policy No. NTD250951402 issued to DAKOTA MINING CORPORATION/BROHM MINING CORPORATION by Reliance National Indemnity Company.

#### RETROACTIVE DATE

In consideration of the premium paid, it is agreed that a retroactive date of September 29, 1992 applies to this Policy. This Policy does not apply to CLEANUP COSTS arising from ENVIRONMENTAL DAMAGE existing prior to the September 29, 1992 date.

All other terms and conditions remain the same.

(Authorized Representative)

RMS/lvt (01/27/95)

RNENVL-FPL-113a (6/94)

### RELIANCE INSURANCE COMPANY OF ILLINOIS

### POLLUTION AND REMEDIATION LEGAL LIABILITY/POLLUTION CLEAN-UP APPLICATION

This is an application for a "claims made and reported" policy—PLEASE READ CAREFULLY

#### **INSTRUCTIONS TO APPLICANTS:**

- 1) Answer all questions; please leave no blank spaces. If any questions do not apply, or the answer is "no," please indicate.
- 2) This form should be used as an indication of the type of information that is required. Where space is limited, please use additional referenced pages.
- 3) If this submission includes multiple locations, please answer the questions that pertain to any of the properties and attach a property schedule that identifies location, description and use.
- 4) This application MUST be signed and dated by a duly authorized owner, partner or officer of the company.
- 5) Attach a copy of the company's most recent annual report and a copy of the last two (2) years audited financial statements.

1)	DETAILS OF THE INSURED
	Name of Applicant: Brohm Mining Corp.
	Mailing Address: P.O. Box 485, Deadwood, SD 57732
	Contact Name: <u>Dale Shay, Director of Environmental Affairs</u>
	Telephone Number:
2)	COVERAGE REQUESTED:
	Policy Term:
	<u>X</u> 1 year 2 years 3 years
	Limits of Liability:
	\$ 318,000 Per Loss or Remediation Expense (\$15 million maximum)
	\$ 318,000 Aggregate (\$30 million maximum)
	Prospective Additional Insured (if any)
	Name: The State of South Dakota
3)	NAMED INSURED IS:
	Partnership X Corporation Joint Venture Other
4)	REVENUES:
	Estimated (Ensuing Year): 19 95 : \$ 4.5 million
	Last Two Years: 19 94 : \$1.0 million 19 93 : \$3.7 million
5)	Describe environmental risk management controls used prior to acquiring property or making loans. Include firms approved to perform environmental site assessments (attach copies of any environmental risk management procedures):
	Prior to acquiring property risk assessments were apparently not conducted. Current
	risk assessments have been made by insurance carriers.

6)	PROPERTY DESCRIPTION:
	Proposed Location:
	Name: Gilt Edge Mine
	Address: 6 miles south of Deadwood, SD off highway 385
7)	Total acreage of this property:Total permitted = 406
8)	What structures are currently on this property (i.e. type of building, square footage, age, etc.)? _Main_office
	Building- 4928 sq. ft.; Laboratory-3200 sq.ft.; Process Plant-9600 sq. ft.; R.O.
	building-1500 sq. ft.; Contractor shop-2400 sq. ft.; Crusher Bldg960 sq. ft.;
	R.O. (new) all others 6 years.; Neutralization Bldg1080 sq. ft.; Fire Bldg-450 sq. ft. Orofino Bldg1500 sq. ft.
9)	List the current occupants of this property: Brohm Mining Corp.
0)	How long has present owner controlled or owned this property? Since 1987
1)	Briefly describe current operations conducted at the site: Open pit heap leach gold and silver mine.
	Start-up in 1987. Gold and silver recovery by Merrill-Crowe system. Historic
	underground mining and associated milling from late 1800's to 1940's.
2)	Does this property generate, handle, store or dispose of any hazardous waste or materials?x_ Yes No
	If Yes, please provide the following details. Laboratory waste, centrifuge tubes, etc.
	a. Describe the on-site storage practices and storage areas: Laboratory streams are disposed according
	to RCRA standards. Centrifuge tubes stored in RCRA approved drums. CN stored in
	RCRA and DOT approved containers.
	b. Describe the disposal methods used: At the present time, there are no plans for disposal of
	these wastes, however should disposal be required, RCRA standards would be followed.
	·

						monitoring results):  points (2) are located
	in Ruby Gu	lch and Strawberr	y Creek. Re		<u> </u>	
				1	Will Follo	W
lf Y	es, please pro	y presently have any a vide the following info	rmation:	nderg		_X Yes No
Ψ.	Tank No.	Construction  Material	Capacity	Age	AST or UST	Secondary Containment
	N/A	Hyd. Peroxide	8,000 gal.	N/A	AST	None
	1 & 2	Hyd. Peroxide	10,000 gal.	3 yrs.	AST	None
	3 & 4 N/A N/A N/A	Liq. Propane Diesel Gasoline Carbon Dioxide	10-12,000 gal. 10,000 gal. 1,000 gal. 8,000 gal.	1. N/A N/A N/A N/A	AST AST AST AST	None Diked Diked None
b.	Explain any ta	ank inventory control a	nd/or testing met	hods used:	All tanks ar	re above ground in
						nventory is always
	Controlled	site slow-down.	u maintenance	person.	Currentry, 1	inventory is always

15)	Ide	ntify any past storage or disposal practices at the site, including any inactive disposal areas: N/A
16)	PR	OPERTY SETTING
	a.	Provide a description of adjacent properties (North, East, South and West): The property is generally
		surrounded on all sides by the U.S. Forest Service. Brohm owns or controls the
		remaining permit areas and adjacent areas.
	b.	Identify nearby surface water bodies (i.e. streams, lakes, wetlands): Two streams, Ruby Gulch and
		Strawberry Creek origniate on the site and flow to Bear Butte Creek (perennial)
		approximately 1.5 miles from the site. Both streams are intermittent on the site.
		No other streams, lakes, or wetlands exist on site.
	C.	Are there any protected environments in the area (parks, wildlife preserves, etc.)?  Yes X No
		If Yes, please describe:
	d.	Identify any surface or groundwater uses in the area (drinking wells, etc.): No domestic or commercial
		uses within 1 mile of the mine property boundaries.
	e.	Is public water and sewer available?Yes _X No
17)	a.	Have any prior environmental audits been done for this property within the past two years? X Yes No
		If Yes, please attach copies as available. Environmental audits conducted by insurance firm, Unavailable to Brohm Mining Corp.
	b.	Were any recommendations made or was any action plan concerning environmental issues suggested?
		Yes No If Yes, please provide full details as to the recommendations and the status of compliance.
		Recommendations are attached.

18) RECORD:
<ul> <li>a. Have you during the last five (5) years been prosecuted for contravention or violation of any standard or law relating</li> <li>to the release from the location(s) of a substance into sewers, rivers, air or onto land?</li> </ul>
If Yes, give details: <u>NOV received from SD-DENR for the accidental spill of CN in 1989</u>
NOV from SD-DENR for release of acid mine drainage in 1993.
b. Please describe any pollution claims during the last five (5) years (if none, please so state): None
c. At the time of signing this application, are you aware of any circumstances which may reasonably be expected
to give rise to a claim under the policy?YesX_ No
If Yes, give details:
THE APPLICANT REPRESENTS THAT THE ABOVE STATEMENTS AND FACTS ARE TRUE AND THAT NO MATERIAL FACTS HAVE BEEN SUPPRESSED OR MISSTATED.
*NOTICE TO NEW YORK APPLICANTS:
Any person who knowingly and with intent to defraud any Insurance Company or other person files an application for insurance containing any false information, or conceals for the purpose of misleading, information concerning any false material thereto, commits a fraudulent insurance act, which is a crime
COMPLETION OF THIS FORM DOES NOT BIND COVERAGE. APPLICANT'S ACCEPTANCE OF COMPANY'S QUOTATION IS REQUIRED PRIOR TO BINDING COVERAGE AND POLICY ISSUANCE. IT IS AGREED THAT THIS FORM SHALL BE THE BASIS OF THE CONTRACT SHOULD A POLICY BE ISSUED, AND IT WILL BE ATTACHED TO THE POLICY.
Applicant:
Applicant's Signature: Date: 12/28/9
Agent/Broker Name: Marsh & McLennan, Incorporated
Agency Name and Address: 1050 17th Street, Suite 900
Denver, Colorado 80265

If an order is received, the application is attached to the policy so it is necessary that all questions be answered in full.

## Pollution and Remediation Legal Liability/pollution Clean-up Application

Attachments - Item 17b

#### Summary of CSI Recommendations for Dakota Hining Corporation Gilt Edga Hine Doadwood, South Dakota

To reduce the overall environmental risk potential associated with the Dakota Mining Corporation, Gilt Edge Mine facility, the following recommendations, with time frames for completion, are offered:

- 94-2-1 It is recommended that Dakota Mining Corporation notify the BCS Pollution Underwriter if construction of an interim treatment system will be required in Strawberry Creek at the Gilt Edge Mine, per United States Environmental Protection Agency, Region VIII Order on Consent, Docket No. CMA-VIII-93-36-C. (as applicable)
- 94-2-2 It is recommended that Dakota Mining Corporation notify the ECS Pollution Underwriter upon receipt of the permit(s) required to begin mining the Anchor Hill reserve at the Gilt Edge Mine. (ss applicable)
- 94-2-3 It is recommended that the Dakota Mining Corporation properly dispose of laboratory furnace wastes currently being stored outside of the Gilt Edge Mine laboratory. (six months)

P.003



MAY | 1554

May 9, 1994

Ms. Nilsa Cabrera Marsh & McLennan, Inc. 2200 Ross Ave. Ste. 3400 Texas Commerce Tower Dallas, TX 75201-7900

Dear Ms. Cabrera:

Brohm Mining Corporation has received a list of loss-prevention recommendations from ECS Underwriting, Inc. for our Pollution Policy No. NTD250951401/NTA250959301. The three recommendations require a response from BMC by June 1, 1994. Our response follows:

- 94-2-1: A decision to construct a treatment system in Strawberry Creek will not be made until final remediation of Strawberry Creek is completed later in 1994. At the time a decision is made, BMC will notify the ECS Pollution Underwriter.
- 94-2-2: The Anchor Hill reserve is not expected to be fully permitted for mining until mid-1995. The ECS Pollution Underwriter will be notified when the permits are complete.
- 94-2-3: BMC is currently negotiating with EPA approved laboratory furnace waste disposal sites for removal of our assay crucibles and cupels. When these materials are removed, the ECS Pollution Underwriter will be notified.

Should you have any additional questions, please feel free to notify us.

Sincerely,

**Director Environmental Affairs** 

DS:sm

cc: Rod J. MacLeod, BMC

J.C. Sowers, DMC

South Dakota Office: P.O. Box 485, Deadwood, South Dakota 57722 Telecopier: (605) 578-1709

Bronn Mining Corp. is a whole owned affiliate of Minister Gold Corporation



May 21, 1991

Linda Newman Coburn Insurance Company 83 Sherman Street Deadwood, South Dakota 57732

Dear Linda:

Per our phone conversation of Monday, attached please find the following:

Fidelity Supplement Blanket
Fidelity Forgery Supplement
Driver Information List (4 Pages)
Adjustments to Contractor's Equipment List for 1991
Adjustments to Vehicle Lists for 1991
Statement of Values

Also, we added a small building to house our neutralization equipment in November of 1989. The value of this facility is \$200,000.00. I am not sure if this building and its equipment were ever added to our policy. Can you check your files for this item.

Thank you for all the assistance you have provided. Please let me know if you need any further information.

Sincerely,

Lauren Ross

Accounting Manager

lame of Applicant: Brohm Mining Con		estation of the
he information in this supplement is required in	n addition to the information provided by the ACORD and USF	- -&G application
Coverage requested isprimary	, to be effective <u>July 1, 1991</u>	
(Primary, Excess	ss, Contributory) (Month, Day	, Year)
t 12:01 A.M		
RATING DATA FOR EMPLOYEE DISHO		<del>_</del>
a. "Ratable Employees" consist of:		Total Number
All officers:		11
ment, other than agents and partr tain records of money, securities those holding any position listed in	•	5
One percent of "all other employed	ees."	
<b>ाग्यामा</b> व	WATER PASSIFICATION TO PENELTY (EES)	
(Insert number	of people occupying the positions indicated.)	
administrators and Asst. Administrators5_	Credit Clerks	
ssistant Accountants1_	Food Checkers and Inspectors	
ssistant Auditors	Head Pharmacists	
ssistant Buyers	Instructors, having custody of money or	
ssistant Cashiers	securities	
ssistant Maitre d's	Janitors	
ssistant Managers		
ssistant Paymasters	Locker Room Attendants	
ssistant Purchasing Agents	Medical Directors	<del></del>
ssistant Sales Managers	Professors, having custody of money or securities	
ssistant Superintendents	Storekeepers	
ssistant Timekeepers	Storeroom Personnel	
Dus Drivers	Supervisors and Ass't. Supervisors Wine Cellar Personnel	
Clerks acting as Appraisers  Collectors	Wine Cenar Personnel Wine Stewards	<del></del>
	THIS SIGNALUS	
	coverage on any of your appointed or elected agents, inc r they be persons, partnerships, or corporations performing ct of your business.	
Capacity	Limit of Insurance \$	
c. Complete the following if you desire co		

USF&G®
INSURANCE

Name(s)

		sition Schedule Coverage	Pos	Name Schedule Coverage
Excess Limit of Insurance Each Employe	No. of Employees in Each Position	Location of Covered Positions (City, State)	Titles of Covered Positions	Names of Covered Employees
\$				

e. Complete the following if y Employee performing the d			ny of your Joint Insureds or on any
Blanket Excess Limit of Insurance \$	Joint Ins	ured	Position
f. Deductibles:			
<ul><li>(1) If a deductible is desire</li><li>(2) Complete the following if</li></ul>	d on all employees in a deductible is desired	all positions, show amount only on employees in specified	positions \$ 50,000
No. of Employees	Position	No. of Employees	Position
EMDI OVEE WEI SADE AND	DENSION RENEEIT	DI ANS TO BE COVERED.	

2.	EMPLOYEE	WELFARE AND	PENSION BENEFIT	PLANS TO	BE COVERED:
----	----------	-------------	-----------------	----------	-------------

- a. Exact legal title(s):
- **b.** Name(s) of Independent Administrator(s):

Agency:

Name	of Applicant: Brohm Mining Corp.		4'
	nformation in this supplement and the appropriate Coverage Form supplement(s) are required ation provided by the ACORD applications.	in additi	on to the
1. D	ESCRIPTION OF YOUR ORGANIZATION:		
a.	Classify your predominant activity:		
	☐ Manufacturer ☐ Processor ☐ Distributor ☐ Retailer ☐ Servicer ☑ Ot  Mining	her (expla	ain):
	Describe the products/services of your predominant business or activity: <u>mining and pro</u> and other precious metals		
EC.	Date business established: January 1, 1987		
_	Has there been any change in ownership or management within the past three years?  If yes, explain:	☐ Yes	KX No
	Does any owner, officer, or employee own more than ten percent interest in the organization?	☐ Yes	x No
	If yes, state the names, positions, and percent of interests for each.		
<b>W</b> 2	Are any owners active in the operation of the organization?	☐ Yes	x No
40	s Is there likely to be a substantial increase in the number of Employees during the premium per	iod by re	ason of:
	(1) Seasonal activity or other circumstances peculiar to your business?		
	(2) Expansion of your business?  Yes No		
2. A	UDIT PROCEDURES OF YOUR ORGANIZATION:		
<b>E3</b> :	Is an outside audit conducted?    Yes    No If no, explain:		
<b>4</b>	Are all premises audited?		
	Are audits done in accordance with generally accepted auditing standards and so certified?	<b>€</b> Yes	☐ No
	If no, explain the scope of the audit:		
Si	Name and mailing address of the person and/or firm doing the audit: Ernst & Young, ARC Tower, 707 17th Street, Suite 3800, Denver, Colorado 80202	0-Marri	ott
	Date last audit was completed for: Cash and Accounts - February 1991 Inventory - February 1991	ruary ]	L991
	TERNAL CONTROLS (OTHER THAN AUDIT PROCEDURES):		
	How often are the bank accounts reconciled?Monthly		

USF&G®

	to prevent unauthorized issuance of checks.	se a sepa		on the property	
<b>W</b>	Are securities subject to joint control of two or	more resp	onsible employees? Not	☐ Yes	□ No
	_	x No	If yes, what is the daily amount co	llected and h	ow many
	locations?		·		
<b>47</b> .	Are order blanks, receipts, invoices, etc. prenu	mbered a	nd accounted for? Not applicab	le 🗌 Yes	☐ No
Ø.	? Are customers' accounts billed monthly by mail	l? We h	ave no customer accounts.	☐ Yes	☐ No
<b>W</b> .	f. If computers are used:				
	(1) Does the organization have in-house progra	ammers?		☐ Yes	<b>▼</b> No
	(2) Is the programmer permitted to operate the	machine	with his programs?Not Applical	ble∐ Yes	☐ No
	(3) Is computer check-writing separate from ch	neck autho	orizing?	x Yes	☐ No
	(4) Are computer operators rotated periodically	/?		☐ Yes	x No
16	Will you arrange to have new Employees comp		• • • • • • • • • • • • • • • • • • • •		
	Underwriter including therein a record of previous	•		x Yes	☐ No
	Will you contact former employers of new empl record?	loyees to	confirm satisfactory past employme	nt <b>√</b> Yes	□No
	LOSS HISTORY: List all losses sustained during	the nest	throa (2) years from the data of thi		_
Discover	vered Type Amount Position L	ocation.	(Other than employee d	iscnarge)	
. PR	PRIOR FIDELITY/FORGERY COVERAGE TO BE	SUPERS	SEDED: None		
	PRIOR FIDELITY/FORGERY COVERAGE TO BE		<del></del>	any	
<u>Fo</u>	Form of Bond or Policy Effective Date Ar	SUPERS	SEDED: None  Name of Insuring Compa  U.S.F.&G.	any	
Fo  6. The belied its r emp	Form of Bond or Policy Effective Date Ar	ers of the erformed to the judgment of knowledge.	Name of Insuring Compa U.S.F.&G.  Insured, have to the best of the Insheir respective duties honestly. The ent of the Insured indicated that an edge as any official or officer signing	ured's knowle ere has never any of the said g for the Insi	come to l officers, ured may
i. The beliates remposed now	Form of Bond or Policy Effective Date Ar  Cov. Form A&B 7/1/90 \$50  The present officers, employees, agents, and partnerelief, while in the service of the Insured always per provide or knowledge any information which in the property of the Insured always per provide or knowledge any information which in the property of the Insured always per provide or knowledge any information which in the property of the Insured always per provide or knowledge any information which in the property of the Insured always per provide or knowledge and partners are dishonest. Sure	ers of the erformed to the judgment of knowledge.	Name of Insuring Compa U.S.F.&G.  Insured, have to the best of the Insheir respective duties honestly. The ent of the Insured indicated that an edge as any official or officer signingt, unknown to the Insured is not import	ured's knowle ere has never any of the said g for the Insi	come to l officers, ured may Insured.
Fo C S. The beliats r emp	Form of Bond or Policy  Cov. Form A&B  7/1/90  \$50  The present officers, employees, agents, and partnerlief, while in the service of the Insured always personation of the Insured always personation of the Insured always personated and partners are dishonest. Sure whave in respect to his or her own personal acts of at Brohm Mining Corp, Deadwood, SD  Brohm Mining Corp.	ers of the erformed to the judgment of knowledge.	Name of Insuring Compa U.S.F.&G.  Insured, have to the best of the Insert of the Insured indicated that an edge as any official or officer signings, unknown to the Insured is not import, unknown to the Insured is not import.	ured's knowle ere has never by of the said g for the Inst butable to the	come to l officers, ured may Insured.
i. The beliates remposed now	Form of Bond or Policy  Cov. Form A&B  7/1/90  \$50  The present officers, employees, agents, and partners elief, while in the service of the Insured always personatice or knowledge any information which in the property of the Insured always personated and partners are dishonest. Sure the present of the Insured always personated and partners are dishonest. Sure the property of the Insured always personated and partners are dishonest. Sure the property of the Insured always personated at Brohm Mining Corp, Deadwood, SD	ers of the erformed to the judgment of knowled or conduction	Name of Insuring Compa U.S.F.&G.  Insured, have to the best of the Insheir respective duties honestly. The ent of the Insured indicated that an edge as any official or officer signingt, unknown to the Insured is not import	ured's knowle ere has never ay of the said g for the Inst butable to the	come to l officers, ured may Insured.

### FORGERY SUPPLEMENT

	ation in this supple requested is $\mathbb{P}$	ment is required in addition to the information of		• •
:01 A	•	(Primary, Excess, Contributory)	to be encoure	(Month. Day. Year)
ATINO	G DATA FOR FOI	RGERY OR ALTERATION:		
Tota	al number of ratab	le employees <u>6.5</u> (Same as Iten	1, Form CL/CR 16 02)	
Adc	litional number of	locations, if applicable:0		
Cor	nplete the followin	g for coverage desired:		
		•	No. of Cardholders	Limit of Insurance
<b>€</b> a.	Credit, debit, or o	harge card coverage: (check one)		
	include; ar	Form B, covered instruments: e limited to: credit, debit, or charge cards o any employee for business purposes.	0	_ \$0
	Warehouse recei	pts and withdrawal: (Check one)		
		Form B, Covered instruments: re limited to: warehouse receipts and s.		\$ 50,000.00
C.	Personal account	s of your officers or partners:		
	Name	Limit of Insurance	Name	Limit of Insurance
C.		·	!	<u>Name</u>
Dec	luctibles:			
		etible is desired: \$_500		

USF&G®

Agency:

# 黎

#### DRIVER INFORMATION

#### To be completed by Branch Office, Agent or Broker.

INSURED Brohm Mining Corp.

ADDRESS P.O. Box 485

Deadwood, SD 57732

POLICY NUMBER 1MP11050042300

EFFECTIVE DATE 7/1/91

BRANCH OFFICE

Minneapolis

AGENT OR BROKER AND ADDRESS

Coburn Insurance Agency P.O. Box 507 Deadwood, SD 57732

To be completed by Insured for all drivers of insured vehicles.

### YES X

ES NO

Complete for all regular drivers.

complete for all regular arrivers.						
NAME - ADDRESS	DATE OF BIRTH	DRIVER'S LICENSE NUMBER	STATE	DATE HIRED		
Myron Anderson RR2, Box 182 A, Whitewood, SD	09-09-57	040387 30957	SD .	04-01-90		
William C. Atkinson		-260 221-52	an.	OR OF 00		
PO Box 665, Grandview Dr 312, Lead, SD	11-25-59	586811 21159	SD	04-05-90		
Larry H. Bakke 808 E. Hudson Circle, Spearfish, SD	04-27-64	504-92-0941	SD	07-19-88		
James Barron 315 Polley Drive, Spearfish, SD	11-05-50	366271 51150	SD	07-13-87		
Tony L. Bicek 146 Upper Valley, Spearfish, SD	09-07-65	145793 60965	SD	07-11-88		
Neil J. Brand P.O. Box 500, Lead, SD	10-22-63	601342 91063	SD	08-22-88		
Jody A. Cerkoney 412 Mine Street, Lead, SD	12-15-71	503-92-2312	SD	10-22-90		
Mark E. Chaplin 1820 Fulton Street, Sturgis, SD	10-08-57	550121 81057	SD	05-14-90		
Todd J. Christopherson 740 W. Jackson	11-06-64	. 504-94-0326	SD	08-22-88		
Tom E. Clausen HC 55, Box 875, Boulder Cyn, Sturgis SD	12-16-48	438605 81248	SD	07-12-88		
Virginia H. Comfort 211 South Main, Lead, SD	02-24-43	47632 80243	SD	03-26-90		
Allen D. Dalton 116 Galena, Lead, SD	10-27-55	483-72-1429	SD	12-13-90		
Richard M. Ferris 312 Main, Deadwood, SD	11-19-63	504 <b>-88-97</b> 55	SD	07-18-88		
Troy Fierro RR 1. Box 7. St. Onge, SD	04-12-63	430699 90463	SD	07-18-88		
William R. Fox 205 Irwin, Lead, SD	06-11-55	066058 90655	SD	05-15-89		
Page 1 of 4				-		

For occasional drivers and family members who use autos please complete the reverse side.

DATE May 21, 1991

SIGNED.

James Barron

TITLE General Manager

## 黎

#### DRIVER INFORMATION

#### To be completed by Branch Office, Agent or Broker.

INSURED Brohm Mining Corp.

ADDRESS P.O. Box 485

Deadwood, SD 57732

POLICY NUMBER 1MP11050042300

EFFECTIVE DATE 7/1/91

BRANCH OFFICE

Minneapolis

AGENT OR BROKER AND ADDRESS

Coburn Insurance Agency P.O. Box 507 Deadwood, SD 57732

To be completed by Insured for all drivers of insured vehicles.

YES X

NO

Com	olete for	all regula	ar drivers.		

Complete for all regular drivers.		·		
NAME - ADDRESS	DATE OF BIRTH	DRIVER'S LICENSE NUMBER	STATE	DATE HIRED
Leslie J. Geffre 7 Mile High Drive, Deadwood, SD	06-14-49	503-56-5155	SD .	03-19-90
Lee P. Gochnour 54 Pearson Drive, Spearfish, SD	09-15-58	J998633	со	05-10-90
Mike Golliher RR 1, Box 238 ½, Spearfish, SD	02-20-61	503-88-0233	SD	02-08-88
Peter L. Goodwin 238 Upper Valley, Spearfish, SD	03-25-51	503-64-8317	SD	10-19-87
Steve A. Gross 259 Evans Lane, Box 52, Spearfish, SD	09-18-62	521730 20962	SD	07-25-88
Elmer J. Haefs HC 73,Box 119, Deadwood, SD	01-11-66	47570 480169	SD	07-18-88
Jay M. Harrison 200 Charles #3, Deadwood, SD	12-13-66	503-98-8465	SD	12-13-90
Joyce A. Heinis 1244 Canyon, Spearfish, SD	02-22-48	117159 40248	SD	06-13-90
Dale L. Hochstetler HCR 73, Box 400, Deadwood, SD	08-24-54	- 434630 00854	SD	07-18-88
Lance Hubbard R 1, Box 77, Whitewood, SD	12-12-48	313699 11248	SD	08-05-87
Robin Larson HCR 73, Box 2224, Deadwood, SD	03-22-62	179281 10362	SD	09-18-89
Rod MacLeod 2202 Arroyo Drive, Rapid City, SD	02-15-55	190641 10255	SD	08-01-87
Robert B. Marquiss 930 8th Street, Spearfish, SD	07-21-51	156629 80751	SD	10-10-88
Micheal G, McFarland 912 Summit Street, Belle Fourche, SD	10-04-53	154014 51053	SD	10-10-88
Stan Michals 3107 Pine Tree Trail	03-25-58	587197 50358	SD	07-18-88
Page 2 of 4				

For occasional drivers and family members who use autos please complete the reverse side.

DATE May 21, 1991

SIGNED.

James Barron

TITLE General Manager

#### DRIVER INFORMATION

To be completed by Branch Office, Agent or Broker.

**INSURED** Brohm Mining Corp.

**ADDRESS** P.O. Box 485

Deadwood, SD 57732

POLICY NUMBER 1MP11050042300

**EFFECTIVE DATE** 7/1/91

BRANCH OFFICE

Minneapolis

AGENT OR BROKER AND ADDRESS

Coburn Insurance Agency P.O. Box 507 Deadwood, SD 57732

To be completed by Insured for all drivers of insured vehicles.

 $\square$ 

NO

plate for all regular drivers

Complete for all regular drivers.					
NAME - ADDRESS	DATE OF BIRTH	DRIVER'S LICENSE NUMBER	STATE	DATE HIRED	
Victor J. Miller 576 Mountain View Drive, Spearfish, SD	07-21-51	523-72-3308	MT .	03-19-90	
William Moths 18 Nickel Place, Spearfish, SD	11-04-55	516-68-4322	SD	09-06-88	
Dwain Nell 913 W. Addie, Lead, SD	10-09-53	107398 01053	SD	01-23-90	
Michael Perovanovic 1750 College Lane, #12	07-09-54	306208 00754	SD	08-22-88	
Kevin L. Peyton HCR 73, Box 1610, Deadwood, SD	09-20-68	504-04-2785	SD	02-18-91	
Martin Pittman RR 1, Box 71, Whitewood, SD	07-12-52	504-70-0651	SD	07-11-88	
Rick E. Richardson HCR 76, Box 100, Nisland, SD	07-08-59	504-86-5866	SD	08-24-90	
Sandor Ringhoffer P.O. Box 752, Lead, SD	07-19-63	523-98-2823	SD	12-01-90	
John Roggenbuck P.O. Box 745, Lead, SD	02-21-41	· 458046 30241	SD	07-18-88	
Lauren B. Ross P.O. Box 786, Sturgis, SD	01-07-48	112982 40148	SD	04-04-88	
David Schulz HC 37, Box 612	09-28-59	503-90-5603	SD	01-04-91	
David M. Sherman 116 Forest Avenue, Lead, SD	06-27-66	504-96-9345	SD	11-27-90	
Marty G. Talley 1932 Pine Street, Sturgis, SD	02-01-63	503-86-5063	SD	12-18-89	
Scott A. Telkamp 107 S. Avenue, Sturgis, SD	07-28-59	504-78-0304	SD	10-10-88	
James Thompson 924 32nd Street, Spearfish, SD	11-05-55	569-13-1058	SD	04-18-88	
Page 3 of 4					

For occasional drivers and family members who use autos please complete the reverse side.

May 21, 1991 DATE

SIGNED

TITLE

James Barron

General Manager

## 黎

#### DRIVER INFORMATION

#### To be completed by Branch Office, Agent or Broker.

INSURED	Broh	m Mining C	orp.		
<b>ADDRESS</b>	P.O.	Box 485	Deadwood,	SD	57732
POLICY N	UMBER	1MP110500	42300		

EFFECTIVE DATE 7/1/91

BRANCH OFFICE Minneapolis

AGENT OR BROKER AND ADDRESS

Coburn Insurance Agency P.O. Box 507 Deadwood, SD 57732

To be completed by Insured for all drivers of insured vehicles.

mplete for all regular drivers.  NAME - ADDRESS	DATE OF BIRTH	DRIVER'S LICENSE NUMBER	STATE	DATE RIRED
'im A. Storbeck	1			
29 3rd Street, Spearfish, SD	02-03-54	504-70-0198	SD .	04-02-9
eith Vanburen 352 N. Blucksberg Mtn Rd, Sturgis SD	01-04-45	520-48-4708	SD	05-31-8
artha Wierzbicki 15 N 1st, #16, Rapid City, SD	11-26-60	517-92-2384	SD	07-11-8
****	`			
		•	+	
			1	
				<del></del>

For occasional drivers and family members who use autos please complete the reverse side.

ATE	May 21, 1991	SIGNED SIGNED
		James Barron
		General Manager

#### Recommended Adjustments to Contractor's Equipment List for 1991

1 Drill Rig-1960 International 3 Ton Truck w/H.D.Bed

1963 Driling Rig w/sampling units

#### Delete:

150HP Cycle-Term Portable Boiler, #9374	\$ 25,000.00
Add:	
1 7,000 Gallon Hydrogen Peroxide Tank Loss Payee: Van Waters & Rogers, Portland, Oregon	\$ 34,000.00
1 Pro-Chopper-Chopping and Mulching Machine	3,400.00

\$ 23,000.00

## BROHM MINING CORP. CONTRACTOR'S EQUIPMENT APRIL 1991

	20,000
Miscellaneous Tools (max of \$5,000 on any one item)	10,000
1988 JCV 525 Leadall Forklift-loader, #276014	37,950
والمراجع والم	Them are also are
150HP Cycle-Therm Portable Boiler, #9374 *	25,000
TOTAL OF INSURANCE	72,950

<sup>\*</sup> Loss Payee -Colorado Boiler, Welding & Manufacturing Co. 1963 Chestnut Place Denver, CO 80202

#### Adjustments to Vehicle List for 1991

#### Delete:

1990 Olds Cutless-Serial #6962 (This leased vehicle will be sold or returned to the dealer in June or July) \$13,700

### BROHM MINING CORP VEHICLE LIST APRIL 1991

	DESCRIPTION	SERIAL#	COST NEW
. 1	1979 CHEVY PICKUP	6100	\$13,000
2.	1986 CHEVY BLAZER	21ø8	15,000
3.	1987 CHEVY PICKUP	Ø <b>5</b> 96	12,000
4.	1987 CHEVY PIÇKUP	1066	12,000
5.	1987 CHEVY BLAZER	2922	16,380
ó.	1988 CHEVY PICKUP (FLEETSIDE)	2910	16,142
7.	1987 CHEVY PICKUP	Ø141	14,000
8.	1987 CHEVY PICKUP	4071	13,300
9.	1987 CHEVY BUAZER	2454	19,900
10.	1987 FORD FICKUP	Ø <b>998</b>	15,274
11	1988 CHEVY PICKUP	1504 *	14,000
12.	1988 CHEVY FICKUP	4697 *	14,000
13.	1988 CHEVY FICKUR	7504 **	16,000
14.	1988 CHEVY PICKUP	2575 *	17,000
15.	1987 FORD VAN	9963	16,000
16.	1989 FORD TAURUS	2537 **	15,000
17.	1987 FORD PICKUP	6500 **	12,000
ia.	1990 OLDS CUTLASS	6962 ***	13,700

<sup>\*</sup> LEASED - BECK'S CHEVROLET 541 MAIN STREET DEADWOOD, SD 57732

\*\* LEASED - DEADWOOD AUTO LEASING P.O. BOX 406 DEADWOOD, SD 57732

\*\*\* LEASED - GMAC C/O PDP SERVICES 7TH FLOOR, EXECUTIVE PLAZA HUNT VALLEY, MD 21031 (LOSS PAYEE & ADD'L INSURED)

## STATEMENT OF VALUES

Insured Broh	m Mining Corp.									
Headquarters Addre	P.O. Box 485 Deadwood, SD 57	732								
Form of Coverage:										
Indicate Form Num	bers to which these rates are t	o apply:								
	(Attach Forms and Endorseme	nts which require	completion to indicate specific information)							
Coinsurance	X 90%	<b>100%</b>	Blanket Rate Effective 7/1/91							
Causes of Loss for	which rates are requested:									
Basic		☐ Earthqu								
Broad ☑x Special		Other _	(specify)							
knowledge and Signed Title	INSURED (Optional with Company) itted are correct to the best of belief.		COMPANY, AGENT or BROKER  Statement of Values submitted by:  Name Coburn Insurance Agency Person to Contact Kevin Cummings  Street P.O. Box 507  City Deadwood State SD ZIP 57732							
	E SERVICES OFFICE use only Basic	Group II	Other							

TO BE COMPLETED BY COMPANY, AGENT OR BROKER				Average Rate Calculation — for INSURANCE SERVICES  Blanket Average Rate					ICE use	☐ Earth						
					Specific Average Rate				90% Broad					Calculated I	»	·.
Item No.	Description, Location and Occupancy of Property Covered	Cover- age*	Values	Rate Pub. No.	D834		Basic Group II		Broad		Special		Earthquake		Other	:
					Rate	Premium	Rate	Premium	Rate	Premium	Rate	Premium	Rate	Premium	Rate	Premium
1	Fire water storage tank & pump system	В	318,000													
2	Elec. power dist. system/	PPI	210,000											1 1		
3	Emergency power dist. system	PPI	65,000													7 20 2 20
4	Plant Bldg. (incl. site prep) (Butler, steel on steel)	BUSI	1,264,00													<
5	Merill Crowe circuit-precipt system (inside) tank, piping,				-	<u> </u>										Ö
	steel decavation tower (inside)	PPI	523,000													
6	Refinery area-electric induction furnace, slag					-	-									<u></u>
	crushers, electrostatic per- cipitation dust collection system	PPI	193,000													
7			86,000											1 1		$\Delta$
8	Plant aux. service pipe	PPI	13,000											100	1.1	्प
9	Fresh water system (tank, 2 pumps & piping below surface)	<del> </del>	163,000									<u>.</u>		<u>.</u>		
10	Crusher bldg. (10X10 Butler	В	6,300									50 C				
10	bldg)	BUSI	196,000 403,000	X	X		X		X		X		X	126.1	X	
	AVER	SIC OUP I		ASIC SOUP II		BROAD	s	PECIAL		EARTH- QUAKE		OTHER				
• B ==	Building . S = "Stock" YBPP ≈ Your Business Personal Property F															

TO BE COMPLETED BY COMPANY, AGENT OR BROKER					Average Rate Calculation — for IN:    Blanket Average Rate   Specific Average Rate			BO%   Basic   Brow   Brow   Brow   Brow   Brow   Brow   Brow   Species   Brow   Brow		1 Other		quake	Date			
item No.	Description, Location and Occupancy of Property Covered		Values	Rate Pub. No.	Basic Group I		Basic Group II		Broad		Special		Earthquake		Other	
	_ of Hoperty Conesa	age"	YANGS	Mu.	Rate	Premium	Rate	Premium	Rate	Premium	Rate	Premium	Rate	Premium	Rate	Premium
	Office Building	В	181,000													
11	11 Office Building		69,000								<u> </u>					
12 Lab Building.		В	92,000								ļ					<b></b>
12	12 Lab Building.		159,000							<u> </u>	ļ					<u>-</u>
13	Boiler Building-all steel	В	173,000	}							<del> </del>					·
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.	Total Bldgs & PP = \$3,711,300						-			<del></del>						
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	Total BUSI - \$1,954,000															
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TOTALS					$\times$		X		X		X		X	-ci	$\times$	
BASI AVERAGE RATES EFFECTIVE GROU						6ROAD S				EARTH- OUAKE	OTHER					
• • •	AVERU  Building S == "Stock" YBPP == Your Business Personal Property PI		<del>-</del>					•								

#### NOTES

- 1. The Company, Agent or Broker must complete page 1 and page 2, where indicated, to obtain a blanket average rate. Do not complete the value column if blanket average rate desired for Business Income Coverage Form CP 00 30 or Extra Expense Coverage Form CP 00 50.
- 2. When separate blanket average rates are desired, such as Buildings only or Personal Property only, submit a separate Statement of Values for each blanket average rate.
- 3. Values must be rounded to the nearest dollar.
- 4. Round the premium, per item on the average rate, for each cause of loss, coverage and exposure to the nearest whole dollar.
- 5. Minimum coinsurance for a blanket average rate is 90%.
- 6. The Company may require this Statement of Values to be signed by the Insured, or in the case of firms by a partner or an officer.
- 7. A blanket average rate expires one year from its effective date or when new class or specific rates are applicable, whichever occurs first.
- 8. This Statement of Values form or its equivalent must be filed annually.
- 9. A new blanket average rate may be requested if the conditions upon which the average rate is based have materially changed.
- 10. Attach Class Rate Information Form or equivalent information for all "class rated" property included in the blanket average rate.